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(54) **1,2,4-TRIAZINE-4-AMINE DERIVATIVES**

1,2,4-TRIAZINE-4-AMIN-DERIVATIVE

DÉRIVÉS DE 1,2,4-TRIAZINE-4-AMINE

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(73) Proprietor: **Heptares Therapeutics Limited**

**Welwyn Garden City
Hertfordshire AL7 3AX (GB)**

(72) Inventors:

- **CONGREVE, Miles Stuart**
Welwyn Garden City
Hertfordshire AL7 3AX (GB)
- **ANDREWS, Stephen Philippe**
Welwyn Garden City
Hertfordshire AL7 3AX (GB)
- **MASON, Jonathan Stephen**
Welwyn Garden City
Hertfordshire AL7 3AX (GB)

- **RICHARDSON, Christine Mary**

Little Chesterford
Saffron Walden CB10 1XL (GB)

- **BROWN, Giles Albert**

Welwyn Garden City
Hertfordshire AL7 3AX (GB)

(74) Representative: **Stratagem IPM Limited**

Meridian Court
Comberton Road
Toft, Cambridge CB23 2RY (GB)

(56) References cited:

EP-A2- 0 088 593 WO-A1-2004/016605
WO-A1-2005/040151 WO-A1-2009/090431

- **DATABASE CAPLUS [Online] CHEMICAL
ABSTRACTS SERVICE, COLUMBUS, OHIO, US;
XP002635106, retrieved from STN Database
accession no. 2007:915510 & B.P.
MALLIKARJUNA ET AL: JOURNAL OF ZHEJIANG
UNIVERSITY, SCIENCE, B, vol. 8, no. 7, 2007,
pages 526-532, ISSN: 1673-1581 cited in the
application**

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Description

[0001] This invention relates, *inter alia*, to certain compounds for use in the treatment of a condition ameliorated by the inhibition of the A₁ receptor or the A_{2a} receptor.

[0002] The listing or discussion of an apparently prior-published document in this specification should not necessarily be taken as an acknowledgement that the document is part of the state of the art or is common general knowledge.

[0003] Parkinson's Disease (PD) is a common progressive neurodegenerative disorder with an estimated prevalence of 0.3 percent in the general population, rising to 5 percent in those over 85. The disease is characterised by tremor, rigidity and bradykinesia, which are caused by the degeneration of dopaminergic neurons in the *substantia nigra pars compacta* and a resulting depletion of dopamine in the striatum.

[0004] Due to an ageing population, the incidence of Parkinson's disease is rising. However, the most effective pharmacological treatment for the disease is still Levodopa (L-dopa), fifty years after its discovery as an antiparkinsonian agent (Chemical & Engineering News 2005, 83(25)).

[0005] L-dopa is the precursor of dopamine and achieves its pharmacological effect by increasing dopaminergic transmission (i.e. by raising the level of dopamine in the striatum). The physiological effect of L-dopa can also be achieved by the administration of directly-acting dopamine agonists such as bromocriptine or pergolide. While the above treatments are initially very effective at controlling some of the symptoms of Parkinson's Disease, particularly rigidity, continuing use results in a wide range of side effects that can be distressing to the patient (e.g. involuntary movements known as dyskinesias).

[0006] Other treatments include inhibition of the dopamine metabolizing enzymes catechol-o-methyl transferase (COMT) or monoamine oxidases (MAOs), or the use of anticholinergics. However, these treatments only provide mild to moderate benefit and suffer from a range of adverse side effects.

[0007] Adenosine is known to be an endogenous modulator of a number of physiological functions. For example, adenosine acts on the cardiovascular system and is a strong vasodilator and a cardiac depressor and is known to have cardioprotective properties (see e.g. Norton et al. Am J Physiol. 1999; 276(2 Pt 2), H341-9; and Auchampach and Bolli Am J Physiol. 1999; 276(3 Pt 2), H1113-6). Effects of adenosine on the central nervous system include sedative, anxiolytic and antiepileptic effects. Further, adenosine acts on the respiratory system by inducing bronchoconstriction. In the kidneys, adenosine exerts a biphasic action, inducing vasoconstriction at low concentrations and vasodilation at high doses, meaning that adenosine may be involved in the pathology of certain types of acute kidney failure (Costello-Boerrigter, et al. Med Clin North Am. 2003 Mar; 87(2), 475-91; Gottlieb, Drugs. 2001, 61(10), 1387-93). Adenosine also acts as a lipolysis inhibitor on fat cells (Feoktistov, et al., Pharmacol. Rev. 1997, 49, 381-402) and as an anti-aggregant on platelets.

[0008] The action of adenosine is mediated by a family of G-protein coupled receptors. Biochemical and pharmacological studies, together with advances in molecular biology, have allowed the identification of at least four subtypes of adenosine receptors, which have been classified as adenosine A₁, A_{2a}, A_{2b} and A₃. The A₁ and A₃ receptors inhibit the activity of the enzyme adenylate cyclase, whereas the A_{2a} and A_{2b} receptors stimulate the activity of the same enzyme, thereby modulating the level of cyclic AMP in cells.

[0009] In the central nervous system, adenosine is a potent endogenous neuromodulator, which controls the presynaptic release of many neurotransmitters and is thus involved in motor function, sleep, anxiety, pain and psychomotor activity. The main adenosine receptor subtypes in the brain are A₁ and A_{2a}. While the A₁ adenosine receptor subtype is found throughout the brain in high density, the distribution of the A_{2a} receptor is more restricted and it is found in high density in the striatum (*caudate-putamen*, *nucleus accumbens*, olfactory tubercle), where it is co-localized with the dopamine D2 receptor on striatopallidal output neurons. The discrete localization of the A_{2a} receptor within the striatum and its ability to functionally antagonize the actions of the D2 receptor has led to the suggestion of the potential utility of A_{2a} receptor antagonists for the symptomatic treatment of Parkinson's disease (see, for example, Cunha et al., Curr Pharm Des. 2008, 14(15), 1512-1524).

[0010] Hence, A_{2a} antagonists can improve motor impairment due to neurodegenerative diseases such as Parkinson's, Huntington's and Alzheimer's disease (Tuite P, et al., J. Expert Opin. Investig. Drugs. 2003; 12, 1335-52; Popoli P. et al. J Neurosci. 2002; 22, 1967-75; and Dall'Igna, et al., Experimental Neurology, 2007, 241-245). Furthermore, A_{2a} antagonists may be employed for the treatment of: attention related disorders such as attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD); psychoses; stroke, extra pyramidal syndrome (e.g., dystonia, akathisia, pseudoparkinsonism and tardive dyskinesia (see Jenner P. J Neurol. 2000; 247 Suppl2: 1143-50); and disorders of abnormal movement such as restless leg syndrome (RLS) and periodic limb movement in sleep (PLMS) (see, for example WO 02/055083, WO 05/044245, WO 06/132275 and Happe S, et al., Neuropsychobiology. 2003, 48, 82-6). Adenosine A_{2a} antagonists are disclosed in US 2007037033 as useful agents for the treatment of amyotrophic lateral sclerosis. WO 01/058241 discloses the treatment of cirrhosis, fibrosis and fatty liver by employing adenosine A_{2a} antagonists. WO 06/009698 describes adenosine A_{2a} antagonists as useful for the mitigation of addictive behaviour. It has been recently demonstrated that adenosine A_{2a} antagonists may be employed for the treatment and prevention of dermal

fibrosis in diseases such as scleroderma (Chan et al. Arthritis & Rheumatism, 2006, 54(8), 2632-2642).

[0011] In addition, A_{2a} antagonists may have therapeutic potential as neuroprotectants (Stone TW. et al., Drag. Dev. Res. 2001, 52, 323-330), in the treatment of sleep disorders (Dunwiddie TV et al., Ann. Rev. Neurosci. 2001, 24, 31-55) and migraine (Kurokawa et al., 2009. Program No. 714.4/B101. 2009 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience).

[0012] Therapeutic uses for compounds that target A₁ receptors are diverse (see, for example Nature Reviews Drug Discovery 5, 2006, 247-264; Journal of Pharmacology and Experimental Therapeutics 323(2), 2007, 708 to 719; British Journal of Pharmacology, 155, 2008, 475 to 486; Journal of the American College of Cardiology 50(16), 2007, 1551-1560; Pharmacology and Therapeutics 123, 2009, 105 to 116).

[0013] Adenosine A₁ receptors are expressed in the kidney and mediate adenosine's effects on both proximal tubular reabsorption and tubular glomerular feedback. Therefore blockade of the A₁ receptor will lead to inhibition of proximal tubular sodium reabsorption which could be beneficial in diseases such as congestive heart failure, chronic renal disease and cirrhosis (Gellai et al., 1998, J Pharmacol Exp Ther 286, 1191-1196; J Am Coll Cardiol, 2007; 50:1551-1560). Compounds being developed as adenosine A₁ receptor antagonists for acute renal failure include rollofylline by Merck and derenofylline by Astellas. Adenosine A₁ receptor antagonists may be employed to treat oedema (Satoh et al., 2000. Gastroenterol. 119(3):829-36), macular degeneration and cirrhosis.

[0014] While compounds with significant biological activity at multiple adenosine receptor subtypes may be therapeutically useful, they may cause unwanted side-effects. For example (as described in Gessi S et al. Pharmacol. Ther. 117(1), 2008, 123-140), adenosine A₃ receptor antagonism has various effects, such as an increased propensity for tissue damage following ischaemia (e.g. in the CNS, heart, kidney, lung and eye), increased reperfusion injury, increased neurodegeneration in response to hypoxia, potentially deleterious effects on motor function or pain thresholds, immunosuppression or immunostimulation.

[0015] A number of compounds are currently being developed as A_{2a} receptor antagonists for the treatment of Parkinson's Disease. These compounds include KW6002 (istradefylline, 8-[(E)-2-(3,4-dimethoxyphenyl)vinyl]-1,3-diethyl-7-methyl-3,7-dihydro-1H-purine-2,6-dione) by Kyowa Hakko Kogyo, SCH-420814 (preladenant, 2-(furan-2-yl)-7-[2-[4-[4-(2-methoxyethoxy)phenyl]piperazin-1-yl]ethyl]-7H-pyrazolo[4, 3-e][1,2,4]-triazolo[1,5-c]pyrimidin-5-amine) by Schering-Plough/Merck, BIIB014 by Biogen Idec, Lu AA47070 by Lundbeck, ST-1535 by Sigma-Tau Farm Riunite SpA, SYN 115 by Synosia, and ASP 5854 by Astellas.

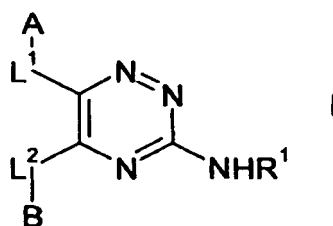
[0016] However, the compounds mentioned above suffer from a number of drawbacks, such as low solubility (KW6002, SCH-420814, BIIB014 and Lu AA47070), light sensitivity (KW6002), low selectivity (Lu AA47070 and ASP 5854), potential toxicity due to the inclusion of known potential toxicophores (SCH-420814 and BIIB014) and limited efficacy *in vivo* (KW6002).

[0017] International patent applications WO 92/02513, WO 00/66568, WO 03/077921, WO 2005/117883, WO 2006/051311, WO 2006/113704 and WO 2009/090431, US patent application publications US 2004/0102436, US 2004/0229873, US 2007/0135437, European patent publication No. 1 400 518 and GB patent No. 1,604,085 disclose 1,2,4-triazine compounds with varying biological activities. There is no suggestion or disclosure in the documents above of 1,2,4-triazine compounds bearing the required substitution pattern required herein, or that any of the compounds disclosed in the documents above might be useful as A₁ or, particularly, A_{2a} receptor antagonists.

[0018] US Patent No. 4,008,232 and French patent No. 2,869,906 disclose a number of 1,2,4-triazine compounds for use in the treatment of inflammation and as sun-block agents, respectively. Doig et al., Journal of Chromatography 1991 554(1-2), 181-189 discloses a metabolite of the anticonvulsant agent Lamotrigine. A number of 1,2,4-triazine compounds with anticonvulsant activity are disclosed in Mallikarjuna et al. J Zhejiang Univ Sci B 2007 8(7), 526-532. A number of 1,2,4-triazine compounds with antiviral activity are disclosed in Davidson et al. Journal of Pharmaceutical Sciences 67(5), 1978, 737-739. A number of 1,2,4-triazine compounds are disclosed in Eid et al., Indian Journal of Chemistry, Section B 1990 29B(5) 435-439, Zou et al., Chinese Journal of Chemistry 1998 16(1), 58-64, Lu et al., Youji Huaxue 1992 .12(6), 605-607, Lu et al., Organic Preparations and Procedures International 1992 24(3), 358-362 and Konno et al. Heterocycles 19(10), 1982, 1865-8. There is no suggestion or disclosure that any of the above compounds might be useful as A₁ or, particularly, A_{2a} receptor antagonists.

[0019] We have now discovered, surprisingly, that certain 1,2,4-triazine compounds bearing certain substituents are useful as A₁ and, particularly, A_{2a} receptor antagonists.

[0020] Thus, we disclose a compound of formula I for use in the treatment of a condition or disorder ameliorated by the inhibition of the A₁ or, particularly, the A_{2a} receptor, wherein the compound of formula I has the structure



wherein:

R^1 represents H or C_{1-6} alkyl, which latter group may be optionally substituted by one or more of halo, OR^{2a} or $NR^{2b}R^{2c}$;

L^1 and L^2 independently represent $CH=CH$, a direct bond, O, NR^{3a} , $S(O)_p$, CH_2 or $C(O)$;

R^{2a} , R^{2b} , R^{2c} and R^{3a} independently represent H or C_{1-6} alkyl, which latter group is optionally substituted by one or more halo atoms;

A represents Cy^1 or Het^A ;

Cy^1 represents a 5- to 14-membered aromatic, fully saturated or partially unsaturated carbocyclic ring system comprising one, two or three rings, which Cy^1 group is optionally substituted by one or more R^{4a} substituents;

Het^A represents a 5- to 14-membered heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, which heterocyclic group may comprise one, two or three rings and which Het^A group is optionally substituted by one or more R^{4b} substituents;

B represents a Cy^2 or Het^B ;

Cy^2 represents a 3- to 10-membered aromatic, fully saturated or partially unsaturated carbocyclic ring system comprising one or two rings, which Cy^2 group is optionally substituted by one or more R^{4c} substituents;

Het^B represents a 3- to 10-membered heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, which heterocyclic group may comprise one or two rings and which Het^B group is optionally substituted by one or more R^{4d} substituents;

R^{4a} to R^{4d} represent, independently at each occurrence,

(a) halo,

(b) CN,

(c) C_{1-12} alkyl, C_{2-12} alkenyl, C_{2-12} alkynyl, which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C_{1-4} alkyl and alkoxy), OR^{5a} , $S(O)_qR^{5b}$, $S(O)_2N(R^{5c})(R^{5d})$, $N(R^{5e})S(O)_2R^{5f}$, $N(R^{5g})(R^{5h})$, $B^1-C(G^1)-B^2-R^{5i}$ aryl and Het^1 ,

(d) Cy^3 , which Cy^3 group is optionally substituted by one or more substituents selected from halo, nitro, CN, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C_{1-4} alkyl and C_{1-4} alkoxy), OR^{6a} , $S(O)_qR^{6b}$, $S(O)_2N(R^{6c})(R^{6d})$, $N(R^{6e})S(O)_2R^{6f}$, $N(R^{6g})(R^{6h})$, $B^3-C(G^1)-B^4-R^{6i}$, aryl and Het^2 ,

(e) Het^a , which Het^a group is optionally substituted by one or more substituents selected from halo, nitro, CN, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C_{1-4} alkyl and C_{1-4} alkoxy), OR^{7a} , $S(O)_qR^{7b}$, $S(O)_2N(R^{7c})(R^{7d})$, $N(R^{7e})S(O)_2R^{7f}$, $N(R^{7g})(R^{7h})$, $B^5-C(G^1)-B^6-R^{7i}$, aryl and Het^3 ,

(f) OR^8 ,

(g) $S(O)_rR^{9a}$

(h) $S(O)_2N(R^{9b})(R^{9c})$,

(i) $N(R^{9d})S(O)_2R^{9e}$,

(j) $N(R^{9f})(R^{9g})$,

(k) B⁷-C(G¹)-B⁸-R^{9h},

(l) =O,

(m) =S,

or when two R^{4a}, R^{4b}, R^{4c} or R^{4d} groups are attached to the same carbon atom in a nonaromatic portion of a Cy¹ Het^A, Cy² or Het^B group, they may form, together with the carbon atom to which they are attached, a saturated or unsaturated 3 to 6-membered ring, which ring optionally contains one to three heteroatoms selected from O, S and N, and which ring is optionally substituted by one or more R⁹ⁱ substituents;

G¹ represents, independently at each occurrence, O, S or NR^{5j};

R⁸ represents, independently at each occurrence,

H,

Cy³, Het^a, aryl^a; C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, C₃₋₈ cycloalkyl, which latter seven groups are optionally substituted by one or more substituents selected from halo, -CN, C₃₋₆ cycloalkyl, aryl, Het⁴, -C(O)OR¹⁰, -C(O)R¹¹, -C(O)N(R^{N1})(R^{N2}), S(O)_rR^{9aa}, S(O)₂N(R^{9ba})(R^{9ca}), N(R^{9da})S(O)₂R^{9ea} and N(R^{9fa})(R^{9ga});

Cy³ represents, independently at each occurrence, a 3- to 6-membered aromatic, fully saturated or partially unsaturated carbocyclic ring;

Het^a represents, independently at each occurrence, a 3- to 6-membered heterocyclic ring that may be aromatic, fully saturated or partially unsaturated and which contains one or more heteroatoms selected from O, S and N;

R¹⁰ and R¹¹ independently represent

(a) H,

(b) C₁₋₆ alkyl optionally substituted by one or more substituents selected from halo, aryl, -N(R^{N3})(R^{N4}) and -OR^a,

(c) aryl or

(d) C₃₋₇ cycloalkyl (which group is optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy);

S¹ to B⁸ independently represent, at each occurrence, a direct bond, O, S or N(R^{N3});

each aryl^a independently represents a C₆₋₁₄ carbocyclic aromatic group, which group may comprise one, two or three rings;

each aryl independently represents a C₆₋₁₄ carbocyclic aromatic group, which group may comprise one, two or three rings and may be substituted by one or more substituents selected from

halo,

C₁₋₆ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N4})(R^{N5}) and -OR^a, and

-OR^a;

Het¹ to Het⁴ independently represent 4- to 14-membered heterocyclic groups containing one or more heteroatoms selected from O, S and N, which heterocyclic groups may comprise one, two or three rings and may be substituted by one or more substituents selected from

halo,

C₁₋₆ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N6})(R^{N7}) and -OR^a, and

-OR^a;

R^{N1} to R^{N7} independently represent

H,

C₁₋₆ alkyl or C₃₋₆ cycloalkyl, which latter two groups are optionally substituted by one or more substituents selected from halo and -OR^a;

R^a represents, independently at each occurrence,

(a) H;

(b) C₁₋₁₂ alkyl, C₂₋₁₂ alkenyl, C₂₋₁₂ alkynyl, C₃₋₁₂ cycloalkyl, C₄₋₁₂ cycloalkenyl, which latter five groups are

optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₃₋₈ cycloalkyl (which latter four groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{12a}, S(O)_qR^{12b}, S(O)₂N(R^{12c})(R^{12d}), N(R^{12e})S(O)₂R^{12f}, N(R^{12g})(R^{12h}), B⁹-C(G²)-B¹⁰-R¹²ⁱ, aryl¹ and Het^b, and which C₃₋₁₂ cycloalkyl or C₄₋₁₂ cycloalkenyl groups may additionally be substituted by =O,

(c) S(O)_rR^{13a}

(d) S(O)₂N(R^{13b})(R^{13c}) or

(e) C(O)-B¹¹-R^{13d};

R^{5a} to R^{5j}, R^{6a} to R⁶ⁱ, R^{7a} to R⁷ⁱ, R^{9a} to R⁹ⁱ, R^{9aa} to R^{9ga}, R^{12a} to R¹²ⁱ and R^{13a} to R^{13d} independently represent, at each occurrence,

(a) H,

(b) C₁₋₁₀ alkyl, C₂₋₁₀ alkenyl, C₂₋₁₀ alkynyl which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₃₋₆ cycloalkyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{5aa}, S(O)_qR^{5ab}, S(O)₂N(R^{5ac})(R^{5ad}), N(R^{5ae})S(O)₂R^{5af}, N(R^{5ag})(R^{5ah}), B¹²-C(G²)-B¹³-R^{5ai}, aryl¹ and Het^c;

(c) C₃₋₁₀ cycloalkyl, or C₄₋₁₀ cycloalkenyl (which latter two groups are optionally substituted by one or more substituents selected from halo, OH, =O C₁₋₆ alkyl and C₁₋₆ alkoxy),

(d) Het^d;

G² represents, independently at each occurrence, O, S, or NR^{5aj};

R^{5aa} to R^{5aj} independently represent at each occurrence,

(a) H,

(b) C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O halo, C₁₋₄ alkyl and C₁₋₄ alkoxy),

(c) C₃₋₆ cycloalkyl, or C₄₋₆ cycloalkenyl (which latter two groups are optionally substituted by one or more substituents selected from halo, OH, =O C₁₋₄ alkyl and C₁₋₄ alkoxy),

(d) Het^e,

or R^{5ag} and R^{5ah} may represent, together with the nitrogen atom to which they are attached, a 3- to 10-membered heterocyclic ring that may be aromatic, fully saturated or partially unsaturated and which may additionally contain one or more heteroatoms selected from O, S and N, which heterocyclic ring is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy);

B⁹ to B¹³ independently represent a direct bond, O, S or N(R^{N8});

aryl¹ represents, independently at each occurrence, a C₆₋₁₀ carbocyclic aromatic group, which group may comprise one or two rings and may be substituted by one or more substituents selected from halo,

C₁₋₆ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N10})(R^{N11}) and alkoxy (which latter substituent is optionally substituted by one or more halo atoms), and alkoxy (which latter substituent is optionally substituted by one or more halo atoms);

R^{N8}, R^{N10} and R^{N11} independently represent

H,

C₁₋₆ alkyl or C₃₋₆ cycloalkyl, which latter two groups are optionally substituted by one or more halo atoms;

Het^b represents a 5- or 6-membered that may be aromatic, fully saturated or partially unsaturated and which contains one or more heteroatoms selected from O, S and N, which heterocyclic group may be substituted by one or more substituents selected from halo, =O and C₁₋₆ alkyl;

Het^c to Het^e independently represent, a 3- to 6-membered heterocyclic ring that may be aromatic, fully saturated or

partially unsaturated and which contains one or more heteroatoms selected from O, S and N, which Het^c to Het^e groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O halo, C₁₋₄ alkyl and alkoxy);

p, q and r independently represent at each occurrence 0, 1 or 2; and unless otherwise specified alkyl, alkenyl, alkynyl, cycloalkyl and the alkyl part of alkoxy groups may be substituted by one or more halo atoms.

[0021] References herein (in any aspect or embodiment of the invention) to compounds of formula I includes references to such compounds *per se*, to tautomers of such compounds, as well as to pharmaceutically acceptable salts or solvates, or pharmaceutically functional derivatives of such compounds.

[0022] Pharmaceutically acceptable salts that may be mentioned include acid addition salts and base addition salts. Such salts may be formed by conventional means, for example by reaction of a free acid or a free base form of a compound of formula I with one or more equivalents of an appropriate acid or base; optionally in a solvent, or in a medium in which the salt is insoluble, followed by removal of said solvent, or said medium, using standard techniques (e.g. *in vacuo*, by freeze-drying or by filtration). Salts may also be prepared by exchanging a counter-ion of a compound of formula I in the form of a salt with another counter-ion, for example using a suitable ion exchange resin.

[0023] Examples of pharmaceutically acceptable salts include acid addition salts derived from mineral acids and organic acids, and salts derived from metals such as sodium, magnesium, or preferably, potassium and calcium.

[0024] Examples of acid addition salts include acid addition salts formed with acetic, 2,2-dichloroacetic, adipic, alginic, aryl sulfonic acids (e.g. benzenesulfonic, naphthalene-2-sulfonic, naphthalene-1,5-disulfonic and *p*-toluenesulfonic), ascorbic (e.g. L-ascorbic), L-aspartic, benzoic; 4-acetamidobenzoic, butanoic, (+) camphoric, camphor-sulfonic, (+)-(1*S*)-camphor-10-sulfonic, capric, caproic, caprylic, cinnamic, citric, cyclamic, dodecylsulfuric, ethane-1,2-disulfonic, ethanesulfonic, 2-hydroxyethanesulfonic, formic, fumaric, galactaric, gentisic, glucoheptonic, gluconic (e.g. D-gluconic), glucuronic (e.g. D-glucuronic), glutamic (e.g. L-glutamic), α -oxoglutaric, glycolic, hippuric, hydrobromic, hydrochloric, hydriodic, isethionic, lactic (e.g. (+)-L-lactic and ($\pm$)-DL-lactic), lactobionic, maleic, malic (e.g. (-)-L-malic), malonic, ($\pm$)-DL-mandelic, metaphosphoric, methanesulfonic, 1-hydroxy-2-naphthoic, nicotinic, nitric, oleic, orotic, oxalic, palmitic, pamoic, phosphoric, propionic, L-pyroglutamic, salicylic, 4-amino-salicylic, sebacic, stearic, succinic, sulfuric, tannic, tartaric (e.g. (+)-L-tartaric), thiocyanic, undecylenic and valeric acids.

[0025] Particular examples of salts are salts derived from mineral acids such as hydrochloric, hydrobromic, phosphoric, metaphosphoric, nitric and sulfuric acids; from organic acids, such as tartaric, acetic, citric, malic, lactic, fumaric, benzoic, glycolic, gluconic, succinic, arylsulfonic acids; and from metals such as sodium, magnesium, or preferably, potassium and calcium.

[0026] As mentioned above, also encompassed by formula I are any solvates of the compounds and their salts. Preferred solvates are solvates formed by the incorporation into the solid state structure (e.g. crystal structure) of the compounds of the invention of molecules of a non-toxic pharmaceutically acceptable solvent (referred to below as the solvating solvent). Examples of such solvents include water, alcohols (such as ethanol, isopropanol and butanol) and dimethylsulfoxide. Solvates can be prepared by recrystallising the compounds of the invention with a solvent or mixture of solvents containing the solvating solvent. Whether or not a solvate has been formed in any given instance can be determined by subjecting crystals of the compound to analysis using well known and standard techniques such as thermogravimetric analysis (TGE), differential scanning calorimetry (DSC) and X-ray crystallography.

[0027] The solvates can be stoichiometric or non-stoichiometric solvates. Particularly preferred solvates are hydrates, and examples of hydrates include hemihydrates, monohydrates and dihydrates.

[0028] For a more detailed discussion of solvates and the methods used to make and characterise them, see Bryn et al., *Solid-State Chemistry of Drugs*, Second Edition, published by SSCI, Inc of West Lafayette, IN, USA, 1999, ISBN 0-967-06710-3.

[0029] "Pharmaceutically functional derivatives" of compounds of formula I as defined herein includes ester derivatives and/or derivatives that have, or provide for, the same biological function and/or activity as any relevant compound of the invention. Thus, the term also includes prodrugs of compounds of formula I.

[0030] The term "prodrug" of a relevant compound of formula I includes any compound that, following oral or parenteral administration, is metabolised *in vivo* to form that compound in an experimentally-detectable amount, and within a predetermined time (e.g. within a dosing interval of between 6 and 24 hours (i.e. once to four times daily)).

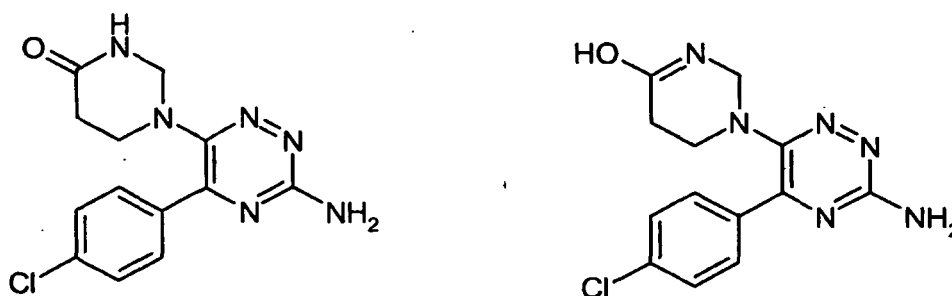
[0031] Prodrugs of compounds of formula I may be prepared by modifying functional groups present on the compound in such a way that the modifications are cleaved, *in vivo* when such prodrug is administered to a mammalian subject. The modifications typically are achieved by synthesizing the parent compound with a prodrug substituent. Prodrugs include compounds of formula I wherein a hydroxyl, amino, sulfhydryl, carboxyl or carbonyl group in a compound of formula I is bonded to any group that may be cleaved *in vivo* to regenerate the free hydroxyl, amino, sulfhydryl, carboxyl or carbonyl group, respectively.

[0032] Examples of prodrugs include, but are not limited to, esters and carbamates of hydroxyl functional groups, esters groups of carboxyl functional groups, N-acyl derivatives and N-Mannich bases. General information on prodrugs may be found e.g. in Bundegaard, H. "Design of Prodrugs" p. 1-92, Elsevier, New York-Oxford (1985).

[0033] Compounds of formula I, as well as pharmaceutically acceptable salts, solvates and pharmaceutically functional derivatives of such compounds are, for the sake of brevity, hereinafter referred to together as the "compounds of formula I".

[0034] Compounds of formula I may contain double bonds and may thus exist as *E* (*entgegen*) and *Z* (*zusammen*) geometric isomers about each individual double bond. All such isomers and mixtures thereof are included within the scope of the invention.

[0035] Compounds of formula I may exist as regioisomers and may also exhibit tautomerism. All tautomeric forms and mixtures thereof are included within the scope of the invention. For example, the following tautomers are included within the scope of the invention:



[0036] Compounds of formula I may contain one or more asymmetric carbon atoms and may therefore exhibit optical and/or diastereoisomerism. Diastereoisomers may be separated using conventional techniques, e.g. chromatography or fractional crystallisation. The various stereoisomers may be isolated by separation of a racemic or other mixture of the compounds using conventional, e.g. fractional crystallisation or HPLC, techniques. Alternatively the desired optical isomers may be made by reaction of the appropriate optically active starting materials under conditions which will not cause racemisation or epimerisation (i.e. a 'chiral pool' method), by reaction of the appropriate starting material with a 'chiral auxiliary' which can subsequently be removed at a suitable stage, by derivatisation (i.e. a resolution, including a dynamic resolution), for example with a homochiral acid followed by separation of the diastereomeric derivatives by conventional means such as chromatography, or by reaction with an appropriate chiral reagent or chiral catalyst all under conditions known to the skilled person. All stereoisomers and mixtures thereof are included within the scope of the invention.

[0037] For the avoidance of doubt, compounds of formula I may contain the stated atoms in any of their isotopic forms. In this respect, embodiments of the invention that may be mentioned include those in which:

- (a) the compound of formula I is not isotopically enriched or labelled with respect to any atoms of the compound; and
- (b) the compound of formula I is isotopically enriched or labelled with respect to one or more atoms of the compound.

[0038] The compound disclosed above may be utilised in a method of medical treatment. Thus, there is provided:

- (i) the use of a compound of formula I for the manufacture of a medicament for the treatment of a condition or disorder ameliorated by inhibition of the A₁ or, particularly, the A_{2a} receptor; and
- (ii) a method of treatment of a disorder or condition ameliorated by antagonising the A₁ or, particularly, the A_{2a} receptor, which method comprises the administration of an effective amount of a compound of formula I to a patient in need of such treatment.

[0039] The term "disorder or condition ameliorated by the inhibition of the A₁ or, particularly, the A_{2a} receptor" will be understood by those skilled in the art to include: heart failure (such as acute decompensated heart failure and congestive heart failure); kidney failure (e.g. caused by heart failure); oedema; cancer (such as prostate, rectal, renal, ovarian, endometrial, thyroid, pancreatic, particularly breast, colon, bladder, brain, glioma, melanoma, pineal gland and, more particularly, lung cancer (e.g. Lewis lung carcinoma)); diabetes; diarrhea; macular degeneration (such as macular degeneration caused by angiogenesis (e.g. retinal angiogenesis)); or, particularly (e.g. for disorders or conditions ameliorated by the inhibition of the A_{2a} receptor), a disease of the central nervous system such as depression, a cognitive function disease, a neurodegenerative disease (such as Parkinson's disease, Huntington's disease, Alzheimer's disease, amyotrophic lateral sclerosis) and psychoses; an attention related disorder (such as attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD)); extra pyramidal syndrome (e.g. dystonia, akathisia, pseudoparkinsonism).

and tardive dyskinesia); a disorder of abnormal movement (such as restless leg syndrome (RLS) and periodic limb movement in sleep (PLMS)); cirrhosis; liver fibrosis; fatty liver; dermal fibrosis (e.g. in diseases such as scleroderma); a sleep disorder; stroke; brain injury and neuroinflammation (e.g. migraine or any disorder or condition caused by ischemia, stroke, head injury or CNS inflammation); addictive behaviour.

[0040] Thus, further aspects of the invention relate to the following.

(a) A compound of formula I, as defined in Claim 1, for use in the treatment of a condition or disorder selected from heart failure (such as acute decompensated heart failure and congestive heart failure); kidney failure (e.g. caused by heart failure); oedema; cancer (such as prostate, rectal, renal, ovarian, endometrial, thyroid, pancreatic, particularly breast, colon, bladder, brain, glioma, melanoma, pineal gland and, more particularly, lung cancer (e.g. Lewis lung carcinoma)); diabetes; diarrhea; macular degeneration (such as macular degeneration caused by angiogenesis (e.g. retinal angiogenesis)); or, particularly (e.g. for disorders or conditions ameliorated by the inhibition of the A_{2a} receptor), a disease of the central nervous system such as depression, a cognitive function disease, a neurodegenerative disease (such as Parkinson's disease, Huntington's disease, Alzheimer's disease, amyotrophic lateral sclerosis) and psychoses; an attention related disorder (such as attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD)); extra pyramidal syndrome (e.g. dystonia, akathisia, pseudoparkinsonism and tardive dyskinesia); a disorder of abnormal movement (such as restless leg syndrome (RLS) and periodic limb movement in sleep (PLMS)); cirrhosis; liver fibrosis; fatty liver; dermal fibrosis (e.g. in diseases such as scleroderma); a sleep disorder; stroke; brain injury and neuroinflammation (e.g. migraine or any disorder or condition caused by ischemia, stroke, head injury or CNS inflammation); addictive behaviour.

(b) Use of a compound of formula I, as defined in Claim 1, for the preparation of a medicament for the treatment of a condition or disorder selected from heart failure (such as acute decompensated heart failure and congestive heart failure); kidney failure (e.g. caused by heart failure); oedema; cancer (such as prostate, rectal, renal, ovarian, endometrial, thyroid, pancreatic, particularly breast, colon, bladder, brain, glioma, melanoma, pineal gland and, more particularly, lung cancer (e.g. Lewis lung carcinoma)); diabetes; diarrhea; macular degeneration (such as macular degeneration caused by angiogenesis (e.g. retinal angiogenesis)); or, particularly (e.g. for disorders or conditions ameliorated by the inhibition of the A_{2a} receptor), a disease of the central nervous system such as depression, a cognitive function disease, a neurodegenerative disease (such as Parkinson's disease, Huntington's disease, Alzheimer's disease, amyotrophic lateral sclerosis) and psychoses; an attention related disorder (such as attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD)); extra pyramidal syndrome (e.g. dystonia, akathisia, pseudoparkinsonism and tardive dyskinesia); a disorder of abnormal movement (such as restless leg syndrome (RLS) and periodic limb movement in sleep (PLMS)); cirrhosis; liver fibrosis; fatty liver; dermal fibrosis (e.g. in diseases such as scleroderma); a sleep disorder; stroke; brain injury and neuroinflammation (e.g. migraine or any disorder or condition caused by ischemia, stroke, head injury or CNS inflammation); addictive behaviour.

[0041] A method of treatment of a disorder or condition selected from heart failure (such as acute decompensated heart failure and congestive heart failure); kidney failure (e.g. caused by heart failure); oedema; cancer (such as prostate, rectal, renal, ovarian, endometrial, thyroid, pancreatic, particularly breast, colon, bladder, brain, glioma, melanoma, pineal gland and, more particularly, lung cancer (e.g. Lewis lung carcinoma)); diabetes; diarrhea; macular degeneration (such as macular degeneration caused by angiogenesis (e.g. retinal angiogenesis)); or, particularly (e.g. for disorders or conditions ameliorated by the inhibition of the A_{2a} receptor), a disease of the central nervous system such as depression, a cognitive function disease, a neurodegenerative disease (such as Parkinson's disease, Huntington's disease, Alzheimer's disease, amyotrophic lateral sclerosis) and psychoses; an attention related disorder (such as attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD)); extra pyramidal syndrome (e.g. dystonia, akathisia, pseudoparkinsonism and tardive dyskinesia); a disorder of abnormal movement (such as restless leg syndrome (RLS) and periodic limb movement in sleep (PLMS)); cirrhosis; liver fibrosis; fatty liver; dermal fibrosis (e.g. in diseases such as scleroderma); a sleep disorder; stroke; brain injury and neuroinflammation (e.g. migraine or any disorder or condition caused by ischemia, stroke, head injury or CNS inflammation); addictive behaviour, is also disclosed, which method comprises the administration of an effective amount of a compound of formula I, as hereinbefore defined.

[0042] Particular disorders or conditions that may be mentioned in relation to the aspects of the invention described hereinbefore include addictive behaviour, ADHD and, particularly, neurodegenerative disease (e.g. Alzheimer's, Huntington's, and, particularly, Parkinson's Disease).

[0043] Embodiments of the invention that may be mentioned include those in which the compounds of formula I selectively inhibit the A₁ and A_{2a} receptor subtypes.

[0044] When used herein in relation to inhibition of the A₁ or A_{2a} receptor, the terms "selective" and "selectivity" includes references to the binding of a compound to the A₁ or, more particularly, A_{2a} receptor with an IC₅₀ value that is at least 10-fold lower (e.g. at least 20-, 50-, 100-, 500- or 1000-fold lower) than the IC₅₀ value determined for the binding of the

same compound to the A₃ receptor sub-type at the same temperature (e.g. room temperature, such as 298 K).

[0045] Embodiments of the invention that may also be mentioned include those in which the compounds of formula I are selective inhibitors of the A_{2a} receptor.

[0046] When used herein in relation to inhibition of the A_{2a} receptor, the terms "*selective*" and "*selectivity*" includes references to the binding of a compound to the A_{2a} receptor with an IC₅₀ value that is at least 10-fold lower (e.g. at least 20-, 50-, 100-, 500- or 1000-fold lower) than the IC₅₀ value determined for the binding of the same compound to another adenosine receptor subtype (e.g. the A_{2b}, particularly A₁, or, more particularly, A₃ receptor sub-type) at the same temperature (e.g. room temperature, such as 298 K). Selectivity for the A_{2a} receptor can be over one other adenosine receptor subtype but, in certain embodiments of the invention, is over two or more (e.g. all other) adenosine receptor subtypes.

[0047] Antagonising the A_{2a} receptor may have neuroprotective effects. Thus, we also disclose:

- (i) a compound of formula I for use as a neuroprotectant;
- (ii) the use of a compound of formula I for the manufacture of a medicament for use as a neuroprotectant; and
- (iii) a method of mitigating damage to brain neurons caused by a neurodegenerative disease (such as Parkinson's disease, Huntington's disease, Alzheimer's disease or amyotrophic lateral sclerosis), stroke or other cerebral trauma, neurotoxins (e.g. mercury and compounds thereof, lead and compounds thereof, organic phosphates and nitrogen mustards), CNS infections (e.g. meningitis, encephalitis, poliomyelitis, tuberculosis, toxoplasmosis, neurosyphilis) or drug use (e.g. cocaine), which method comprises the administration of an effective amount of a compound of formula I to a patient at risk of damage to brain neurons from neurodegenerative disease, stroke or other cerebral trauma, neurotoxins, CNS infections or drug use.

[0048] References herein to patients at risk of damage to brain neurons from neurodegenerative disease, stroke or other cerebral trauma include references to patients who have been determined by clinical assessment to have a higher than average risk (as determined, for example, by comparison to normal individuals of the same age) of developing a neurodegenerative disease (e.g. Parkinson's disease, Huntington's disease, Alzheimer's disease or amyotrophic lateral sclerosis) or of having a stroke.

[0049] Antagonising the A₁ receptor may have effects on kidney function. Thus, according to further aspects of the invention there are provided:

- (i) a compound of formula I for use in mitigating kidney damage caused by acute renal failure, oedema, heart failure, chronic renal disease and/or cirrhosis; and
- (ii) the use of a compound of formula I for the manufacture of a medicament for mitigating kidney damage caused by acute renal failure, oedema, heart failure, chronic renal disease and/or cirrhosis.

[0050] We also disclose a method of mitigating kidney damage caused by acute renal failure, oedema, heart failure, chronic renal disease and/or cirrhosis, which method comprises the administration of an effective amount of a compound of formula I to a patient at risk of damage to kidney function by acute renal failure, congestive heart failure, chronic renal disease or cirrhosis.

[0051] References herein to kidney damage include, in particular, kidney damage caused by acute renal failure.

[0052] References herein to patients at risk of damage to kidney function by acute renal failure, heart failure, chronic renal disease or cirrhosis include references to patients who have been determined by clinical assessment to have a higher than average risk (as determined, for example, by comparison to normal individuals of the same age) of developing acute renal failure, heart failure, chronic renal disease or cirrhosis.

[0053] For the avoidance of doubt, in the context of the present invention, the term "*treatment*" includes references to therapeutic or palliative treatment of patients in need of such treatment, as well as to the prophylactic treatment and/or diagnosis of patients which are susceptible to the relevant disease states.

[0054] The terms "*patient*" and "*patients*" include references to mammalian (e.g. human) patients.

[0055] The term "*effective amount*" refers to an amount of a compound, which confers a therapeutic effect on the treated patient (e.g. sufficient to treat or prevent the disease). The effect may be objective (i.e. measurable by some test or marker) or subjective (i.e. the subject gives an indication of or feels an effect).

[0056] The term "*halo*", when used herein, includes references to fluoro, chloro, bromo and iodo.

[0057] Unless otherwise stated, the term "*carbocyclic*" when used herein in connection with groups Cy¹ and Cy² includes references to carbocyclic groups (e.g. C₅₋₆ carbocyclic groups) that are mono-, bi- or tricyclic and which may be fully saturated, partly unsaturated or wholly aromatic in character. For example, Cy¹ and Cy² groups may be selected from the group comprising of cyclobutyl, cyclobutenyl, cyclopropyl, cyclopropenyl, particularly cyclopentyl, cyclopentenyl, (1Z,2Z,4Z,6Z,8Z)-cyclodecapentaenyl, more particularly, cyclohexyl, cyclohexenyl, indanyl, indenyl, naphthalenyl (e.g. 1,2,3,4-tetrahydronaphthyl), and, yet more particularly, phenyl). The point of attachment of carbocyclic

groups may be *via* any atom of the ring system.

[0058] Unless otherwise stated herein, the term "heterocyclic", when used herein in connection with groups Het^A and Het^B includes references to heterocyclic groups which may be fully saturated, partly unsaturated or wholly aromatic in character.

[0059] Thus Het^A and Het^B represent a 5- to 14- or a 3- to 10-membered heterocyclic group, respectively, that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, which heterocyclic groups may comprise one, two or three rings and which Het^A or Het^B group is optionally substituted by one or more R^{4b} or R^{4d} substituents, respectively.

[0060] The heterocyclic group (e.g. Het^A or Het^B) may contain up to 5 heteroatom ring members selected from O, N and S, and more particularly up to 4 heteroatom ring members. For example, the heterocyclic group may contain 1, 2 or 3 heteroatom ring members.

[0061] In one example, Het^A and Het^B may each represent a monocyclic, bicyclic or tricyclic 5- to 14- or 3- to 10-membered heterocyclic group, respectively, containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S. Within this subset, Het^A or Het^B (where appropriate) may be selected, for example, from (i) monocyclic heterocyclic groups of 5 to 7 ring members containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S; (ii) 6.5 fused bicyclic heterocyclic groups of 9 ring members containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S; (iii) 6.6 fused bicyclic heterocyclic groups of 9 ring members containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S; (iv) 6.5.6 fused tricyclic heterocyclic groups of 13 ring members containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S; (v) 6.6.6 fused tricyclic heterocyclic groups of 14 ring members containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S; and (vi) bridged bicyclic heterocyclic groups of 7 or 8 ring members containing 1 or 2 heteroatom ring members selected from O, N and S.

[0062] By "bridged ring systems" is meant ring systems in which two rings share more than two atoms, see for example Advanced Organic Chemistry, by Jerry March, 4th Edition, Wiley Interscience, pages 131-133, 1992.

[0063] In another example, Het^A and Het^B may be the same or different and each represents a monocyclic or bicyclic 5 to 10 membered heterocyclic group containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S. Within this subset, Het^A or Het^B may be selected, for example, from (i) monocyclic heterocyclic groups of 5 to 7 ring members containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S; (ii) 6.5 fused bicyclic heterocyclic groups of 9 ring members containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S; (iii) 6.6 fused bicyclic heterocyclic groups of 9 ring members containing 1, 2, 3 or 4 heteroatom ring members selected from O, N and S; and (vi) bridged bicyclic heterocyclic groups of 7 or 8 ring members containing 1 or 2 heteroatom ring members selected from O, N and S.

[0064] In each of the foregoing subsets of compounds, when Het^A is a pyridonyl group, it may be other than a pyridin-2-one group (for example it may be a pyridin-4-one group).

[0065] For example, Het^A and Het^B may be selected from the group comprising of azepinyl, diazepinyl, dihydrofuranyl (e.g. 2,3-dihydrofuranyl, 2,5-dihydrofuranyl), 4,5-dihydro-1*H*-maleimido, dioxolanyl, furanyl, furazanyl, hydantoinyl, imidazolyl, isothiazolyl, isoxazolidinyl, isoxazolyl, morpholinyl, oxadiazolyl, 1,2= or 1,3-oxazinanyl, oxazolidinyl, oxazolyl, piperazinyl, piperidinyl, pyrazolyl, pyridinyl, pyrimidinyl, pyrrolidinyl, pyrrolidinonyl, pyrrolinyl, pyrrolyl, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetrazolyl, thiadiazolyl, thiazolyl, thienyl, thiomorpholinyl, thiophenetyl, triazolyl, more particularly, dihydropyranyl (e.g. 3,4-dihydropyranyl, 3,6-dihydropyranyl), dioxanyl, hexahydropyrimidinyl, isobenzofuranyl, pyranyl, pyrazinyl, pyrazolyl, pyridazinyl, tetrahydropyranyl, 3,4,5,6-tetrahydropyridinyl, 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, tetrahydrothiophenyl, tetramethylenesulfoxide, thiazolidinyl, triazinanyl and the like. The point of attachment of carbocyclic groups may be *via* any atom of the ring system.

[0066] Definitions of A that may be mentioned therefore include indolinonyl, pyridazinonyl, octahydroisoquinolin-(1*H*)-yl, 2,2,6,6-tetramethyl-3,6-dihydro-2*H*-pyran-4-yl, indolinonyl, 6-oxa-9-azaspiro[4.5]decanyl, octahydroisoquinolin-(1*H*)-yl, hexahydropyrrolo[1,2-*a*]pyrazin-(1*H*)-yl, pyridazinonyl or, particularly, cyclopentyl, cyclopentenyl, dihydrofuranyl (e.g. 2,3-dihydrofuranyl, 2,5-dihydrofuranyl), 4,5-dihydro-1*H*-maleimido, dioxolanyl, furanyl, furazanyl, hydantoinyl, imidazolyl, isoxazolyl, isoxazolidinyl, isothiazolyl, oxadiazolyl, oxazolyl, pyrrolidinyl, pyrrolidinonyl, pyrazolyl, pyrrolinyl (e.g. 3-pyrrolinyl), pyrrolyl, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetramethylenesulfoxide, tetrazolyl, thiadiazolyl, thiazolyl, thiazolidinyl, thienyl, triazolyl, or more particularly, acridinyl, 2-azabicyclo[4.1.0]heptanyl, 1-azabicyclo-[2.2.2]octanyl, azepinyl, benzimidazolyl, benzisothiazolyl, benzisoxazolyl, benzodioxanyl, benzodioxepanyl, benzodioxepinyl, benzodioxolyl, benzofuranyl, benzofurazanyl, benzo[c]isoxazolidinyl, benzomorpholinyl, 2,1,3-benzoxadiazolyl, benzoxazinyl (including 3,4-dihydro-2*H*-1,4-benzoxazinyl), benzoxazolidinyl, benzoxazolyl, benzopyrazolyl, benzo[e]pyrimidine, 2,1,3-benzothiadiazolyl, benzothiazolyl, benzothienyl, benzotriazolyl, carbazolyl, chromanyl, chromenyl, cinnolinyl, (1*Z*,2*Z*,4*Z*,6*Z*,8*Z*)-cyclodecapentaenyl, cyclohexyl, cyclohexenyl, decahydroisoquinolenyl, diazepinyl, 2,3-dihydrobenzimidazolyl, 2,3-dihydrobenzo[b]furanyl, 1,3-dihydrobenzo[c]furanyl, 1,3-dihydro-2,1-benzisoxazolyl, dihydropyranyl (e.g. 3,4-dihydropyranyl, 3,6-dihydropyranyl), 2,3-dihydropyrrolo[2,3-*b*]pyridinyl, dioxolanyl, dioxanyl, hexahydropyrimidinyl, imidazo[1,2-*a*]pyridinyl, imidazo[1,5-*a*]pyridinyl, imidazo[2,3-*b*]thiazolyl, indanyl, indazolyl, indenyl, indolinyl, indolyl, isobenzofuranyl, isochromanyl, isoindolinyl, isoindolyl, isoquinolinyl, isothiochromanyl, ketopiperidinyl (e.g.

2-ketopiperidinyl, 3- ketopiperidinyl or 4-ketopiperidinyl), morpholinyl, naphthalenyl (e.g. 1,2,3,4-tetrahydronaphthyl), naphtho[1,2-*b*]furanyl, naphthyridinyl (including 1,6-naphthyridinyl or, particularly, 1,5-naphthyridinyl and 1,8-naphthyridinyl), 1,2- or 1,3-oxazinanyl, oxazolidinyl, phenazinyl, phenothiazinyl, phenyl, phthalazinyl, piperidinyl, piperazinyl, pteridinyl, purinyl, pyranyl, pyrazinyl, pyridazinyl, pyridinyl (e.g. 2-pyridinyl, 3-pyridinyl, 4-pyridinyl), pyridinonyl (such as 5-1*H*-pyridin-2-onyl, particularly, 1-1*H*-pyridin-2-onyl, 3-1*H*-pyridin-2-onyl, 4-1*H*-pyridin-2-onyl, 6-1*H*-pyridin-2-onyl (wherein 1-, 3-, 4- and 6- refer to the point of attachment of the 1*H*-pyridin-2-onyl group to the rest of the molecule), or, particularly, 1*H*-pyridin-4-onyl), pyrimidinyl, pyrrolo[2,3-*b*]pyridinyl, pyrrolo[5,1-*b*]pyridinyl, pyrrolo[2,3-*c*]pyridinyl, quina-
 zolinyl, quinolinyl, quinoliziny, quinoxaliny, 4,5,6,7-tetrahydrobenzimidazolyl, 4,5,6,7-tetrahydrobenzopyrazolyl, 5,6,7,8-
 tetrahydrobenzo-[*e*]pyrimidine, tetrahydroisoquinolinyl (including 1,2,3,4-tetrahydroisoquinolinyl and 5,6,7,8-tetrahydr-
 oisoquinolinyl), tetrahydroquinolinyl (including 1,2,3,4-tetrahydroquinolinyl and 5,6,7,8-tetrahydroquinolinyl), tetrahydro-
 pyranyl, tetrahydropyridinyl (e.g. 3,4,5,6-tetrahydropyridinyl), 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidi-
 nyl, tetrahydrothiophenyl, thieno[5,1-*c*]pyridinyl, thiochromanyl, thiophenetyl, thiomorpholinyl, triazinanyl, 1,3,4-triazo-
 lo[2,3-*b*]pyrimidinyl, or xanthenyl and the like.

[0067] Further, definitions of B in compounds of formula I that may be mentioned include 2-azabicyclo[4.1.0]heptanyl, 1-azabicyclo-[2.2.2]octanyl, azepinyl, azetidiny, aziridinyl, benzimidazolyl, benzisothiazolyl, benzisoxazolyl, benzodiox-
 anyl, benzodioxolyl, benzofurazanyl, benzo[*c*]isoxazolidinyl, benzomorpholinyl, 2,1,3-benzoxadiazolyl, benzoxazinyl (in-
 cluding 3,4-dihydro-2*H*-1,4-benzoxazinyl), benzoxazolidinyl, benzoxazolyl, benzopyrazolyl, benzo[*e*]pyrimidine, 2,1,3-
 benzothiadiazolyl, benzothiazolyl, benzothienyl, benzotriazolyl, chromanyl, chromenyl, cinnolinyl, cyclohexyl, cyclohex-
 enyl, cyclopentyl, cyclopentenyl, cyclopropyl, cyclopropenyl, decahydroisoquinolenyl, 2,3-dihydrobenz-imidazolyl, di-
 azepinyl, dihydrofuranyl (e.g. 2,3-dihydrofuranyl, 2,5-dihydrofuranyl), 2,3-di-hydrobenzo[*b*]furanyl, 1,3-dihydroben-
 zo-[*c*]furanyl, dihydropyranyl (e.g. 3,4-dihydropyr-anyl, 3,6-dihydropyranyl), 4,5-dihydro-1*H*-maleimido, 1,3-dihydro-2,1-
 benzisoxazolyl 2,3-dihydropyrrolo[2,3-*b*]pyridinyl, dioxanyl, dioxolanyl, furazanyl, hexahydropyrimidinyl, hydantoinyl, im-
 idazolyl, imidazo[1,2-*a*]pyridinyl, imidazo[2,3-*b*]thiazolyl, indanyl, indenyl, indolinyl, isobenzofuranyl, isochromanyl, iso-
 indolinyl, isoindolyl, isoquinolinyl, isothiazolyl, isothiochromanyl, isoxazolyl, isoxazolidinyl, ketopiperidinyl (e.g. 2-keto-
 piperidinyl, 3-ketopiperidinyl or 4-ketopiperidinyl), morpholinyl, naphthalenyl (e.g. 1,2,3,4-tetrahydronaphthyl), naphthy-
 ridinyl (including 1,6-naphthyridinyl or, particularly, 1,5-naphthyridinyl and 1,8-naphthyridinyl), oxadiazolyl, 1,2- or 1,3-
 oxazinanyl, oxazolidinyl, oxazolyl, piperidinyl, piperazinyl, phthalazinyl, pteridinyl, purinyl, pyranyl, pyridazinyl, pyrrolid-
 inonyl, pyrrolinyl (e.g. 3-pyrrolinyl), pyrrolyl, pyrrolo[2,3-*b*]pyridinyl, pyrrolo[5,1-*b*]pyridinyl, pyrrolo[2,3-*c*]pyridinyl, quina-
 zolinyl, quinolinyl, quinoliziny, quinoxaliny, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetrahydropyranyl, 3,4,5,6-tetrahy-
 dropyridinyl, 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, tetrahydrothiophenyl, 4,5,6,7-tetrahydrobenz-
 imidazolyl, 4,5,6,7-tetrahydrobenzopyrazolyl, 5,6,7,8-tetrahydrobenzo-[*e*]pyrimidine, tetrahydroisoquinolinyl (including
 1,2,3,4-tetrahydroisoquinolinyl and 5,6,7,8-tetrahydroisoquinolinyl), tetrahydroquinolinyl (including 1,2,3,4-tetrahydro-
 quinolinyl and 5,6,7,8-tetrahydroquinolinyl), tetramethylenesulfoxide, tetrazolyl, thiazolidinyl, thiazolyl, thienyl, thieno[5,1-
c]pyridinyl, thiochromanyl, thiophenetyl, thiomorpholinyl, triazinanyl, triazolyl, 1,3,4-triazolo[2,3-*b*]pyrimidinyl or more par-
 ticularly, benzofuranyl, furanyl, indazolyl, indolyl, pyrazinyl, pyrazolyl, pyridinyl (e.g. 2-pyridinyl, 3-pyridinyl, 4-pyridinyl),
 pyridinonyl, pyrimidinyl, pyrrolo[1,5-*a*]pyridinyl, or phenyl and the like.

[0068] Unless otherwise stated, the term "aryl" when used herein includes C₆₋₁₄ (such as C₆₋₁₀) aryl groups. Such groups may be monocyclic, bicyclic or tricyclic and have between 6 and 14 ring carbon atoms, in which at least one ring is aromatic. The point of attachment of aryl groups may be *via* any atom of the ring system. However, when aryl groups are bicyclic or tricyclic, they are linked to the rest of the molecule *via* an aromatic ring. C₆₋₁₄ aryl groups include phenyl, naphthyl and the like, such as 1,2,3,4-tetrahydronaphthyl, indanyl, indenyl and fluorenyl. Embodiments of the invention that may be mentioned include those in which aryl is phenyl.

[0069] Het¹ to Het⁴ groups may be fully saturated, partly unsaturated, wholly aromatic or partly aromatic in character. Values of Het¹ to Het⁴ groups that may be mentioned include acridinyl, 1-azabicyclo-[2.2.2]octanyl, azetidiny, benzimidazolyl, benzisothiazolyl, benzisoxazolyl, benzodioxanyl, benzodioxepanyl, benzodioxepinyl, benzodioxolyl, benzofura-
 nyl, benzofurazanyl, benzo[*c*]isoxazolidinyl, benzomorpholinyl, 2,1,3-benzoxadiazolyl, benzoxazinyl (including 3,4-dihy-
 dro-2*H*-1,4-benzoxazinyl), benzoxazolidinyl, benzoxazolyl, benzopyrazolyl, benzo[*e*]pyrimidine, 2,1,3-benzothiadiazolyl, benzothiazolyl, benzothienyl, benzotriazolyl, carbazolyl, chromanyl, chromenyl, cinnolinyl, 2,3-dihydrobenzimidazolyl, 2,3-dihydrobenzo[*b*]furanyl, 1,3-dihydrobenzo-[*c*]furanyl, 1,3-dihydro-2,1-benzisoxazolyl 2,3-dihydropyrrolo[2,3-*b*]pyrid-
 inyl, dioxanyl, furanyl, furazanyl, hexahydropyrimidinyl, hydantoinyl, imidazolyl, imidazo[1,2-*a*]pyridinyl, imidazo[2,3-*b*]thi-
 azolyl, indazolyl, indolinyl, indolyl, isobenzofuranyl, isochromanyl, isoindolinyl, isoindolyl, isoquinolinyl, isothiazolyl, iso-
 thiochromanyl, isoxazolidinyl, isoxazolyl, maleimido, morpholinyl, naphtho[1,2-*b*]furanyl, naphthyridinyl (including 1,6-
 naphthyridinyl or, particularly, 1,5-naphthyridinyl and 1,8-naphthyridinyl), oxadiazolyl, 1,2- or 1,3-oxazinanyl, oxazolyl, phenazinyl, phenothiazinyl, phthalazinyl, piperazinyl, piperidinyl, pteridinyl, purinyl, pyranyl, pyrazinyl, pyrazolyl, pyri-
 dazinyl, pyridinyl, pyrimidinyl, pyrrolidinonyl, pyrrolidinyl, pyrrolinyl, pyrrolo[2,3-*b*]pyridinyl, pyrrolo[5,1-*b*]pyridinyl, pyrro-
 lo[2,3-*c*]pyridinyl, pyrrolyl, quinazolinyl, quinolinyl, quinoliziny, quinoxaliny, sulfolanyl, 3-sulfolenyl, 4,5,6,7-tetrahyd-
 robenzimidazolyl, 4,5,6,7-tetrahydrobenzopyrazolyl, 5,6,7,8-tetrahydrobenzo-[*e*]pyrimidine, tetrahydrofuranyl, tetrahy-
 droisoquinolinyl (including 1,2,3,4-tetrahydroisoquinolinyl and 5,6,7,8-tetrahydroisoquinolinyl), tetrahydropyranyl,

3,4,5,6-tetrahydropyridinyl, 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, tetrahydroquinolinyl (including 1,2,3,4-tetrahydroquinolinyl and 5,6,7,8-tetrahydroquinolinyl), thiadiazolyl, thiazolidinyl, thiazolyl, thienyl, thieno[5,1-c]pyridinyl, thiochromanyl, thiophenetyl, triazolyl, 1,3,4-triazolo[2,3-b]pyrimidinyl, xanthenyl and the like.

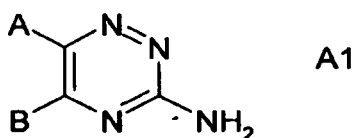
[0070] Het^a and Het^c to Hdt^e groups may be fully saturated, partly unsaturated, wholly aromatic or partly aromatic in character. Het^a groups that may be mentioned include azetidiny, aziridinyl, dioxanyl, furanyl, furazanyl, hexahydropyrimidinyl, hydantoinyl, imidazolyl, maleimido, morpholinyl, oxadiazolyl, 1,2- or 1,3-oxazinanyl, oxazolyl, piperazinyl, piperidinyl, pyranyl, pyrazinyl, pyrazolyl, pyridazinyl, pyridinyl, pyrimidinyl, pyrrolidinonyl, pyrrolidinyl, pyrrolinyl, pyrrolyl, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetrahydropyranyl, 3,4,5,6-tetrahydropyridinyl, 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, thiadiazolyl, thiazolidinyl, thiazolyl, thienyl, thiophenetyl, triazolyl and the like.

[0071] Het^b groups may be fully saturated, partly unsaturated, wholly aromatic or partly aromatic in character. Het^b groups that may be mentioned include dioxanyl, furanyl, furazanyl, hexahydropyrimidinyl, hydantoinyl, imidazolyl, maleimido, morpholinyl, oxadiazolyl, 1,2- or 1,3-oxazinanyl, oxazolyl, piperazinyl, piperidinyl, pyranyl, pyrazinyl, pyrazolyl, pyridazinyl, pyridinyl, pyrimidinyl, pyrrolidinonyl, pyrrolidinyl, pyrrolinyl, pyrrolyl, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetrahydropyranyl, 3,4,5,6-tetrahydropyridinyl, 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, thiadiazolyl, thiazolidinyl, thiazolyl, thienyl, thiophenetyl, triazolyl and the like.

[0072] Substituents on heterocyclic (Het^A, Het^B, Het¹ to Het⁴, Het^a to Het^e) groups may, where appropriate, be located on any atom in the ring system including a heteroatom. The point of attachment of heterocyclic (Het^A, Het^B, Het¹ to Het⁴, Het^a to Het^e) groups may be via any atom in the ring system including (where appropriate) a heteroatom (such as a nitrogen atom), or an atom on any fused carbocyclic ring that may be present as part of the ring system. Heterocyclic (Het^A, Het^B, Het¹ to Het⁴, Het^a to Het^e) groups may also be in the *N*- or *S*- oxidised form.

[0073] Examples of compounds of formula I that may be mentioned include those in which L¹ and L² independently represent a direct bond, O, NR^{3a}, S(O)_p, CH₂ or C(O).

[0074] We disclose compounds of formula I in which L¹ and L² represent single bonds, R¹ represents H, and the compound of formula I may be represented as a compound of formula A1,



wherein A represents Cy^{AA} or Het^{AA};

Cy^{AA} represents a 6-membered aromatic, fully saturated or partially unsaturated carbocyclic ring system, which Cy^{AA} group is substituted, in the 3-position relative to the point of attachment to the triazine ring, with a R^{4a} substituent and is optionally substituted by one or more additional R^{4a} substituents;

Het^{AA} represents a 6-membered heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, and which Het^{AA} group is substituted, in the 3-position relative to the point of attachment to the triazine ring, with a R^{4b} substituent and is optionally substituted by one or more additional R^{4b} substituents;

B represents a Cy^{BB} or Het^{BB};

Cy^{BB} represents phenyl optionally substituted by one or more R^{4c} substituents;

Het^{BB} represents a 6-membered aromatic heterocyclic group which contains one or more N atoms, and which Het^{BB} group is optionally substituted by one or more R^{4d} substituents;

R^{4a}, R^{4b}, R^{4c} and R^{4d} are as defined above in relation to compounds of formula I.

[0075] Embodiments of the invention that may be mentioned include those that relate to compounds of formula I (or, particularly, formula A1) in which A represents Cy^{AA'}, Het^{AA'}, Het^{AA''} or Het^{AA'''}, wherein:

Cy^A represents a 6-membered aromatic, fully saturated or partially unsaturated carbocyclic ring system, which Cy^{AA} group is substituted, in the 3-position relative to the point of attachment to the triazine ring, with a R^{4a} substituent and is substituted in the 4-position relative to the point of attachment to the triazine ring, with a OR⁸ substituent and is optionally further substituted by one or more additional R^{4a} substituents;

Het^{AA} represents a 6-membered heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, and which Het^{AA} group is substituted, in the 3-position relative to the point of attachment to the triazine ring, with a R^{4b} substituent and is substituted, in the 4-position relative to the point of attachment to the triazine ring, with a OR⁸ substituent, and is optionally further

substituted by one or more additional R^{4b} substituents;

Het^{AA} represents a 6-membered heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains, in the 4-position relative to the point of attachment to the triazine ring, a N-atom, and which group optionally contains one or more further heteroatoms selected from O, S and N, which Het^{AA} group is substituted, in the 3-position relative to the point of attachment to the triazine ring, with a R^{4b} substituent and is optionally substituted by one or more additional R^{4b} substituents; and

He^{AA'} represents a 6-membered heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, which Het^{AA'} group is substituted, in the 3-position relative to the point of attachment to the triazine ring, with a R^{4b} substituent and is substituted, in the 4-position relative to the point of attachment to the triazine ring, with an oxo (=O) group, and is optionally further substituted by one or more additional R^{4b} substituents (e.g. Het^{AA'} represents a 4-pyridon-1-yl optionally substituted by one or more R^{4b} substituents).

[0076] Further embodiments of the invention that may be mentioned include those that relate to compounds of formula I (or, particularly, formula A1) in which:

when A represents Cy^{AA} or Cy^{AA}, that 6-membered carbocyclic ring is further substituted, in the 5-position relative to the point of attachment to the triazine ring, with a R^{4a} substituent; or

when A represents Het^{AA}, Het^{AA}, Het^{AA'} or Het^{AA'}, that 6-membered heterocyclic ring is further substituted, in the 5-position relative to the point of attachment to the triazine ring, with a R^{4b} substituent.

[0077] Still further embodiments of the invention that may be mentioned include those that relate to compounds of formula I (or, particularly, formula A1) in which:

(1) Het^{BB} represents a 6-membered aromatic heterocyclic group which contains 3, 2 or, particularly, 1 N atoms, and which Het^{BB} group is optionally substituted by one or more R^{4d} substituents;

(2) B represents Cy^{BB};

(3) Cy^{BB} represents phenyl optionally substituted by one or two R^{4c} substituents;

(4) cy^{AA} represents phenyl substituted, in the 3-position relative to the point of attachment to the triazine ring, with a R^{4a} substituent, and optionally substituted by one or more additional R^{4a} substituents;

(5) Het^{AA} represents a 6-membered aromatic heterocyclic group which contains one or more (e.g. 3, 2 or particularly 1) N atoms, and which Het^{AA} group is substituted, in the 3-position relative to the point of attachment to the triazine ring, with a R^{4b} substituent and is optionally substituted by one or more additional R^{4b} substituents;

(6) B represents a pyrimidinyl ring or, particularly, a phenyl or pyridinyl (e.g. a pyridin-4-yl) ring, which ring is optionally substituted by one or more R^{4c} or R^{4d} substituents;

(7) R^{4c} and R^{4d} represent, independently at each occurrence,

(a) halo (e.g. chloro or, particularly, fluoro),

(b) CN,

(c) C₁₋₆ alkyl optionally substituted by one or more substituents selected from halo and OR^{5a}, or

(d) OR⁸;

(8) A represents a Cy^{AA} or Het^{AA} group that is unsubstituted in the *ortho*-positions relative to the point of attachment to the triazine ring;

(9) R^{4a} and R^{4b} represent, independently at each occurrence,

(a) halo,

(b) CN,

(c) C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₄ alkyl, (which latter group is optionally substituted by one or more substituents selected from OH, =O, halo), OR^{5a}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ, aryl and Het¹,

(d) Cy³, which Cy³ group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₄ alkyl, (which latter group is optionally substituted by one or more substituents selected from OH, =O, halo), OR^{6a}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ, aryl and Het²,

(e) Het^a, which Het^a group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₄ alkyl, (which latter group is optionally substituted by one or more substituents selected from OH, =O halo),

OR^{7a}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-B⁶-R⁷ⁱ, aryl and Het³,

(f) OR⁸,

(g) S(O)_rR^{9a},

(j) N(R^{9f})(R^{9g}),

(k) B⁷-C(G¹)-B⁸-R^{9h},

(l) =O,

or when two R^{4a} or R^{4b} groups are attached to the same carbon atom in a nonaromatic portion of a Cy¹ Cy^{AA}, Het^A or Het^{AA} group, they may form, together with the carbon atom to which they are attached, a saturated or unsaturated 3 to 6-membered ring, which ring optionally contains one to three heteroatoms selected from O, S and N, and which ring is optionally substituted by one or more R⁹ⁱ substituents;

[0078] Still further embodiments of the invention that may be mentioned include those that relate to compounds of formula I (or, particularly, formula A1) in which R^{4a} to R^{4b} represent, independently at each occurrence,

(a) halo,

(b) CN,

(c) C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, which latter three groups are optionally substituted by one or more substituents selected from halo, C₁₋₄ alkyl and OR^{5a},

(d) Cy³,

(e) Het^a,

(f) OR⁸, wherein R⁸ represents H or C₁₋₄ alkyl optionally substituted by one or more halo atoms;

(g) S(O)_rR^{9a}, wherein R^{9a} represents C₁₋₃ alkyl optionally substituted by one or more halo atoms;

(h) N(R^{9f})(R^{9g}), wherein R^{9f} and R^{9g} independently represent C₁₋₃ alkyl optionally substituted by one or more halo atoms;

(i) B⁷-C(G¹)-B⁸-R^{9h}, wherein R^{9h} represents C₁₋₃ alkyl optionally substituted by one or more halo atoms;

(j) =O,

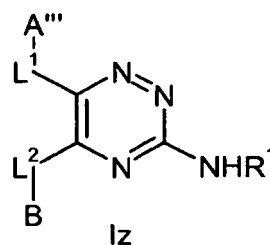
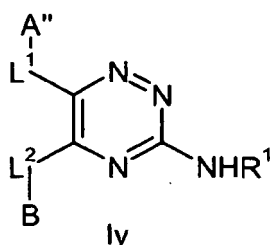
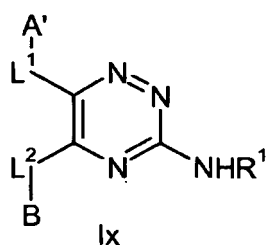
or when two R^{4a} or R^{4b} groups are attached to the same carbon atom in a non-aromatic portion of a Cy¹, Cy^{AA}, Het^A or Het^{AA} group, they may form, together with the carbon atom to which they are attached, a saturated 3 to 6-membered ring.

[0079] Still further examples that may be mentioned include those that relate to compounds of formula I (or, particularly, formula A1) in which B represents a Cy^{BB} or Het^{BB} group (e.g. phenyl), which group is either unsubstituted or is substituted by one or more substituents selected from fluoro, CN, OR⁸ or C₁₋₆ alkyl optionally substituted by one or more substituents selected from halo and OR^{5a}, wherein R^{5a} and R⁸ are as hereinbefore defined.

[0080] In particular examples, B represents a Cy^{BB} or Het^{BB} group (e.g. phenyl), which group is either unsubstituted or is substituted by one or more fluoro atoms (e.g. at the 4-position relative to the point of attachment to the triazine ring) only.

[0081] In other compounds, R^{4a} is (or R^{4a} and R^{4b} are) as defined above except that it does (they do) not represent OR⁸ in which R⁸ represents CH₃. In such circumstances, R^{4a} (or R^{4a} and R^{4b}) may, for example, (independently) represent, at each occurrence, halo, OH, N(H)-C(O)-C₁₋₃ alkyl or C₁₋₃ alkyl optionally substituted by one or more fluoro atoms.

[0082] In certain examples, the compound of formula I may be represented as a compound of formula Ix, Iy or Iz,



respectively, wherein:

A' represents Cy^{1'} or Het^{A'};

Cy^{1'} represents a 6-membered aromatic, fully saturated or partially unsaturated carbocyclic ring system comprising one, two or three rings, which Cy^{1'} group is substituted, in the 4-position relative to the point of attachment to L¹, with a OR⁸ substituent and is optionally further substituted by one or more R^{4a} substituents;

Het^{A'} represents a 6-membered heterocyclic group that may be aromatic, fully saturated or partially unsaturated,

and which contains one or more heteroatoms selected from O, S and N, which heterocyclic group may comprise one, two or three rings and which Het^{A'} group is substituted, in the 4-position relative to the point of attachment to L¹, with a OR⁸ substituent and is optionally further substituted by one or more R^{4b} substituents;

(e.g. A' represents phenyl which group is substituted, in the 4-position relative to the point of attachment to L¹, with a OR⁸ substituent and is optionally further substituted by one or more R^{4a} substituents);

A" represents Het^{A"};

Het^{A"} represents a 6-membered heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains, in the 4-position relative to the point of attachment to L¹, a N-atom, and which group optionally contains one or more further heteroatoms selected from O, S and N, which Het^{A"} group is optionally substituted by one or more R^{4b} substituents;

(e.g. A" represents 6-membered aromatic heterocyclic group (e.g. pyridyl) that contains, in the 4-position relative to the point of attachment to L¹, a N atom, which heterocyclic group is optionally substituted by one or more R^{4b} substituents);

A''' represents Het^{A'''};

Her^{A'''} represents a 6-membered heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, which Het^{A'''} group is substituted, in the 4-position relative to the point of attachment to L¹, an oxo (=O) group, and is optionally further substituted by one or more R^{4b} substituents;

(e.g. A''' represents 4-pyridon-1-yl optionally substituted by one or more R^{4b} substituents); and

B, L¹, L², R¹, R^{4a}, R^{4b} and R⁸ are as defined above in relation to compounds of formula I (or A1).

[0083] Examples that may be mentioned include those that relate to compounds of formula I in which at least one of L¹ and L² represents a direct bond, while the other may represent CH=CH or, particularly, a direct bond, O, NR^{3a}, S(O)_p, CH₂ or C(O) (e.g. at least one of L¹ and L² represents a direct bond, and the other represents CH=CH or, particularly, C(O) or, more particularly, a direct bond, O, NR^{3a} or S(O)_p).

[0084] Thus, in one example, L¹ and L² are both direct bonds.

[0085] Examples that may be mentioned include those that relate to compounds of formula I wherein L¹ represents a direct bond and L² is selected from CH=CH or, particularly, a O, NR^{3a}, S(O)_p, CH₂ and C(O) (e.g. L¹ represents a direct bond and L² is selected from O, CH₂ or C(O)).

[0086] Further examples that may be mentioned include those that relate to compounds of formula I wherein L² represents a direct bond and L¹ is selected from CH=CH or, particularly, O, NR^{3a}, S(O)_p, CH₂ and C(O) (e.g. L² represents a direct bond and L¹ is selected from O, CH₂ or C(O)).

[0087] Examples that may be mentioned include those that relate to compounds of formula I in which:

(1) R¹ represents H or C₁₋₃ alkyl, which latter group is optionally substituted by one or more of halo, OR^{2a} or NR^{2b}R^{2c} (e.g. R¹ represents H or C₁₋₃ alkyl, which latter group is optionally substituted by one or more of halo or NR^{2b}R^{2c} or, particularly, R¹ represents H or C₁₋₂ alkyl, which latter group is optionally substituted by one or more of halo or NR^{2b}R^{2c});

(2) L¹ and L² independently represent CH=CH or, particularly, NR^{3a}, S(O)_p, or, more particularly, CH₂, or, still more particularly, a direct bond, O, or C(O);

(3) R^{2a}, R^{2b} and R^{2c} and R^{3a} represents H or C₁₋₃ alkyl, which latter group is optionally substituted by one or more halo atoms

(e.g. R^{2a} represents C₁₋₃ alkyl, which group is optionally substituted by one or more halo atoms; R^{2b} and R^{2c} independently represent H or methyl, which latter group is optionally substituted by one or more halo atoms; and R^{3a} represents H or C₁₋₃ alkyl, which latter group is optionally substituted by one or more halo atoms);

(4) Cy¹ represents a 5- to 13-membered (e.g. 5- to 10- or more particularly 6- to 10-membered) aromatic, fully saturated or partially unsaturated carbocyclic ring system comprising one to three (e.g. one or two) rings, which Cy¹ group is optionally substituted by one or more R^{4a} substituents;

(5) Het^A represents a 5- to 13-membered (e.g. 5- to 10- or more particularly 6- to 10-membered) heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, which heterocyclic group may comprise one to three (e.g. one or two) rings and which Het^A group is optionally substituted by one or more R^{4b} substituents;

(6) Cy² represents a 5- to 10-membered (e.g. 5- to 9-membered or, particularly, 6- to 9-membered) aromatic, fully saturated or partially unsaturated carbocyclic ring system comprising one or two rings, which Cy² group is optionally substituted by one or more R^{4c} substituents;

(7) Het^B represents a 5- to 10-membered (e.g. 5- to 9-membered or, particularly, 6- to 9-membered) heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, which heterocyclic group may comprise one to three (e.g. one or two) rings and which

Het^B group is optionally substituted by one or more R^{4d} substituents;

(8) R^{4a} to R^{4d} represent, independently at each occurrence,

halo,

CN,

C₁₋₆ alkyl (e.g. C₂₋₆ alkyl), C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₃ alkyl, C₂₋₃ alkenyl, C₂₋₃ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₃ alkyl and C₁₋₃ alkoxy), OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ, aryl and Het¹,

Cy³, which Cy³ group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{6a}, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ, aryl and Het²,

Het^a, which Het^a group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-B⁶-R⁷ⁱ, aryl and Het³,

OR⁸,

S(O)_rR^{9a},

S(O)₂N(R^{9b})(R^{9c}),

N(R^{9d})S(O)₂R^{9e},

N(R^{9f})(R^{9g})

B⁷-C(G¹)-B⁸-R^{9h},

=O,

=S,

or when two R^{4a}, R^{4b}, R^{4c} or R^{4d} groups are attached to the same carbon atom in a non-aromatic portion of a Cy¹, Het^A, Cy² or Het^B group, they may form, together with the carbon atom to which they are attached, a saturated or unsaturated 3 to 6-membered ring, which ring optionally contains one to three heteroatoms selected from O, S and N, and which ring is optionally substituted by one or more

R⁹ⁱ substituents;

(9) G¹ represents, independently at each occurrence, O or S;

(10) R⁸ represents, independently at each occurrence,

H,

Cy³, Het^a, aryl^a, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₃₋₆ cycloalkyl, which latter seven groups are optionally substituted by one or more substituents selected from halo, -CN, C₃₋₆ cycloalkyl, aryl, Het⁴, -C(O)OR¹⁰, -C(O)R¹¹ and -C(O)N(R^{N1})(R^{N2}), S(O)_rR^{9aa}, S(O)₂N(R^{9ba})(R^{9ca}), N(R^{9da})S(O)₂R^{9ea} and N(R^{9fa})(R^{9ga});

(11) Cy³ represents, independently at each occurrence, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkenyl or phenyl;

(12) Het^a represents, independently at each occurrence, a 4- to 6-membered heterocyclic ring that may be aromatic, fully saturated or partially unsaturated and which contains one or more heteroatoms selected from O, S and N;

(13) R¹⁰ and R¹¹ independently represent

H,

C₁₋₃ alkyl optionally substituted by one or more substituents selected from halo, aryl, -N(R^{N3})(R^{N4}) and -OR^a, phenyl (which latter group is optionally substituted by one or more substituents selected from OH, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy) or

C₃₋₆ cycloalkyl (which latter group is optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy);

(14) B¹ to B⁸ independently represent, at each occurrence, O or, particularly, a direct bond or N(R^{N3});

(15) each aryl^a independently represents a C₆₋₁₀ carbocyclic aromatic group (e.g. phenyl), which group may comprise one or two rings;

(16) each aryl independently represents a C₆₋₁₀ carbocyclic aromatic group (e.g. phenyl), which group may comprise one or two rings and may be substituted by one or more substituents selected from

halo,

C₁₋₆ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N4})(R^{N5}) and -OR^a, and

-OR^a;

(17) Het¹ to Het⁴ independently represent 5- to 13-membered heterocyclic groups containing one or more heteroatoms selected from O, S and N, which heterocyclic groups may comprise one, two or three rings and may be substituted by one or more substituents selected from

halo,

C₁₋₆ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N6})(R^{N7}) and -OR^a, and

-OR^a;

(18) R^{N1} to R^{N7} independently represent

H,

C₁₋₃ alkyl or C₃₋₅ cycloalkyl, which latter two groups are optionally substituted by one or more substituents selected from halo and -OR^a;

(19) R^a represents, independently at each occurrence,

H,

C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₃₋₆ cycloalkyl, C₄₋₆ cycloalkenyl (which latter five groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₃₋₈ cycloalkyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{12a}, S(O)_qR^{12b}, S(O)₂N(R^{12c})(R^{12d}), N(R^{12e})S(O)₂R^{12f}, N(R^{12g})(R^{12h}), B⁹-C(G²)-B¹⁰-R¹²ⁱ, aryl¹ and Het^b, and which C₃₋₆ cycloalkyl or C₄₋₆ cycloalkenyl groups may additionally be substituted by =O),

S(O)_rR^{13a},

S(O)₂N(R^{13b})(R^{13c}) or

C(O)-B¹³-R^{13d};

(20) R^{5a} to R^{5l}, R^{6a} to R⁶ⁱ, R^{7a} to R⁷ⁱ, R^{9a} to R⁹ⁱ, R^{9aa} to R^{9ga}, R^{12a} to R¹²ⁱ and R^{13a} to R^{13d} independently represent, at each occurrence,

H,

C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from halo, OH and C₁₋₄ alkoxy),

C₃₋₆ cycloalkyl or C₄₋₆ cycloalkenyl (which latter two groups are optionally substituted by one or more substituents selected from halo, OH, =O, C₁₋₆ alkyl and C₁₋₆ alkoxy),

Het^d;

(21) G² represents, independently at each occurrence, O or S;

(22) R^{5aa} to R^{5aj} independently represent at each occurrence,

H,

C₁₋₃ alkyl, C₂₋₃ alkenyl, C₂₋₃ alkynyl which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy),

C₃₋₅ cycloalkyl, or C₄₋₅ cycloalkenyl (which latter two groups are optionally substituted by one or more substituents selected from halo, OH, =O, C₁₋₄ alkyl and C₁₋₄ alkoxy),

Het^e;

(23) B⁹ to B¹³ independently represent a direct bond or N(R^{N8});

(24) aryl¹ represents, independently at each occurrence, phenyl or naphthyl, which may be substituted by one or more substituents selected from halo,

C₁₋₃ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N10})(R^{N11}) and C₁₋₄ alkoxy (which latter substituent is optionally substituted by one or more halo atoms), and

C₁₋₄ alkoxy (which latter substituent is optionally substituted by one or more halo atoms);

(25) R^{N8}, R^{N10} and R^{N11} independently represent

H,

C₁₋₃ alkyl or C₃₋₃ cycloalkyl, which latter two groups are optionally substituted by one or more halo atoms;

(26) Het^b represents a heterocyclic group selected from dioxanyl, furanyl, furazanyl, hexahydropyrimidinyl, hydantoinyl, imidazolyl, maleimido, morpholinyl, oxadiazolyl, 1,2- or 1,3-oxazinanyl, oxazolyl, piperazinyl, piperidinyl, pyranal, pyrazinyl, pyrazolyl, pyridazinyl, pyridinyl, pyrimidinyl, pyrrolidinonyl, pyrrolidinyl, pyrrolinyl, pyrrolyl, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetrahydropyranal, 3,4,5,6-tetrahydropyridinyl, 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, thiadiazolyl, thiazolidinyl, thiazolyl, thienyl, thiophenetyl, triazolyl, which heterocyclic group may be substituted by one or more substituents selected from halo, =O and C₁₋₆ alkyl;

(27) Het^c to Het^e independently represent, a 4- to 6-membered heterocyclic ring that may be aromatic, fully saturated or partially unsaturated and which contains one or more heteroatoms selected from O, S and N, which Het^c to Het^e groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy).

[0088] Examples that may be mentioned include those that relate to compounds of formula I in which:

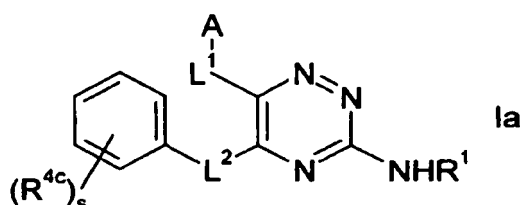
(1) Cy¹ represents a 5- to 10-membered (e.g. 6- to 10-membered) aromatic, fully saturated or partially unsaturated

carbocyclic ring system comprising one or two rings, which Cy¹ group is optionally substituted by one or more R^{4a} substituents;

(2) Het^A represents a 5- to 10-membered (e.g. 6- to 10-membered) heterocyclic group that may be aromatic, fully saturated or partially unsaturated, and which contains one or more heteroatoms selected from O, S and N, which heterocyclic group may comprise one or two rings and which Het^A group is optionally substituted by one or more R^{4b} substituents;

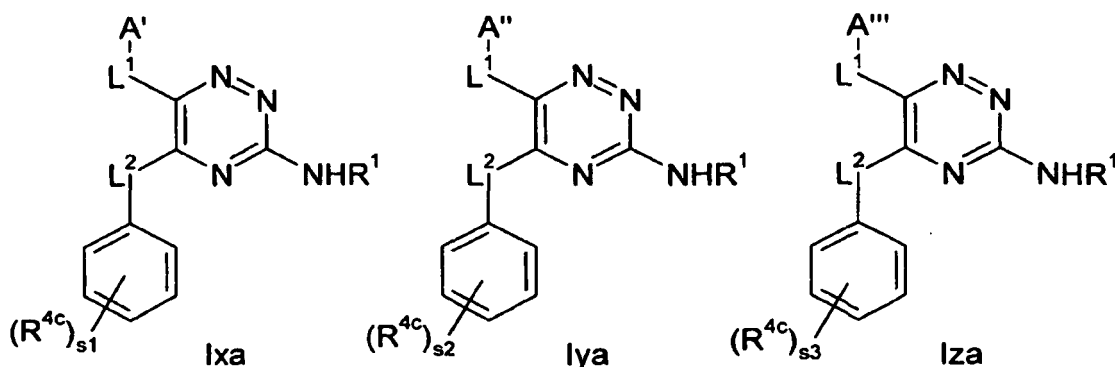
(3) B represents a group, selected from 2-azabicyclo[4.1.0]heptanyl, 1-azabicyclo-[2.2.2]octanyl, benzimidazolyl, benzisothiazolyl, benzisoxazolyl, benzodioxanyl, benzodioxolyl, benzofurazanyl, benzo[c]isoxazolidinyl, 2,1,3-benzoxadiazolyl, benzoxazolidinyl, benzoxazolyl, benzopyrazolyl, 2,1,3-benzothiadiazolyl, benzothiazolyl, benzothienyl, benzotriazolyl, cyclopentyl, cyclohexyl, cyclopentenyl, cyclohexenyl, 2,3-dihydrobenzimidazolyl, dihydrofuranyl (e.g. 2,3-dihydrofuranyl, 2,5-dihydrofuranyl), 2,3-dihydrobenzo[b]furanyl, 1,3-dihydrobenzo[c]furanyl, dihydropyranyl (e.g. 3,4-dihydropyranyl, 3,6-dihydropyranyl), 4,5-dihydro-1*H*-maleimido, 1,3-dihydro-2,1-benzisoxazolyl, 2,3-dihydropyrrolo[2,3-*b*]pyridinyl, dioxanyl, dioxolanyl, furazanyl, hexahydropyrimidinyl, hydantoinyl, imidazolyl, imidazo[1,2-*a*]pyridinyl, imidazo[2,3-*b*]thiazolyl, indanyl, indenyl, indolinyl, isobenzofuranyl, isoindolinyl, isoindolyl, isothiazolyl, isoxazolyl, isoxazolidinyl, ketopiperidinyl (e.g. 2-ketopiperidinyl, 3- ketopiperidinyl or 4-ketopiperidinyl), morpholinyl, oxadiazolyl, 1,2- or 1,3-oxazinanyl, oxazolidinyl, oxazolyl, piperidinyl (e.g. piperidin-1-yl or, particularly, piperidin-2-yl, piperidin-3-yl, piperidin-4-yl, piperidin-5-yl or piperidin-6-yl), piperazinyl, phthalazinyl, pteridinyl, purinyl, pyranyl, pyridazinyl, pyrrolidinonyl, pyrrolinyl (e.g. 3-pyrrolinyl), pyrrolyl, pyrrolo[2,3-*b*]pyridinyl, pyrrolo[5,1-*b*]pyridinyl, pyrrolo[2,3-*c*]pyridinyl, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetrahydropyranyl, 3,4,5,6-tetrahydropyridinyl, 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, tetrahydrothiophenyl, 4,5,6,7-tetrahydrobenzimidazolyl, 4,5,6,7-tetrahydrobenzopyrazolyl, tetramethylenesulfoxide, tetrazolyl, thiazolidinyl, thiazolyl, thienyl, thieno[5,1-*c*]pyridinyl, thiophenetyl, triazinanyl, triazolyl, 1,3,4-triazolo[2,3-*b*]pyrimidinyl, more particularly, benzofuranyl, indazolyl, indolyl, pyrazinyl, pyrazolyl, pyridinyl (e.g. 2-pyridinyl, 3-pyridinyl, 4-pyridinyl), pyridinonyl, pyrimidinyl, pyrrolo[1,5-*a*]pyridinyl, and, yet more particularly, phenyl, wherein B is optionally substituted by one or more R^{4c} or R^{4d} substituents, as appropriate (e.g. B represents a group selected from benzofuranyl, furanyl, indazolyl, indolyl, pyrazinyl, pyrazolyl, pyridinyl (e.g. 2-pyridinyl, 3-pyridinyl, 4-pyridinyl), pyridinonyl, pyrimidinyl, pyrrolo[1,5-*a*]pyridinyl, and phenyl, wherein B is optionally substituted by one or more R^{4c} or R^{4d} substituents, as appropriate).

[0089] In certain examples, B represents phenyl and the compound of formula I may be represented as a compound of formula Ia,



wherein *s* represents 0 to 5 (e.g. 0 to 3 or, particularly, 0 to 2), and R^{4c}, A, L¹, L² and R¹ are as defined above in relation to compounds of formula I.

[0090] In certain examples, the compound of formula I may be represented as a compound of formula Ixa, Iya or Iza,



respectively, wherein *s*₁, *s*₂ and *s*₃ independently represent 0 to 5 (e.g. 0 to 3 or, particularly, 0 to 2), and A', A'', A'''

L¹, L², R^{4c} and R¹ are as defined above in relation to compounds of formula I (or A1, or particularly, Ix, Iy or Iz).

[0091] Examples that may be mentioned include those that relate to compounds of formula I (or A1 or, particularly, Ix, Iy Iz, Ixa, Iya and Iza or, more particularly, Ia) in which:

- (1) R¹ represents H, CH₃, CF₃, CH₂F, CHF₂, CH₂CH₃, CH₂CF₃, (CH₂)₂OCH₃, (CH₂)₂OCF₃, (CH₂)₃OCH₃, (CH₂)₃OCF₃, (CH₂)₂NH₂, (CH₂)₂NH(CH₃), (CH₂)₂N(CH₃)₂, (CH₂)₃NH₂, (CH₂)₃NH(CH₃) or (CH₂)₃N(CH₃)₂;
- (2) L¹ represents S, NH, CH=CH or, particularly, CH₂, a direct bond, O, or C(O) (e.g. L¹ represents S, NH, CH=CH, a direct bond, O or C(O) or, particularly, a direct bond, O or C(O) or, more particularly, L¹ represents a direct bond);
- (3) L² represents CH₂, a direct bond, O, or C(O) (e.g. L² represents a direct bond or O or, particularly, L² represents a direct bond);
- (4) R^{2a}, R^{2b}, R^{2c} and R^{3a} independently represent H, CH₃, CF₃, CH₂F, CHF₂, CH₂CH₃ or CH₂CF₃ (e.g. R^{2a} represents CH₃, CF₃, CH₂F, CHF₂, CH₂CH₃ or CH₂CF₃ and R^{2b}, R^{2c} and R^{3a} independently represent H, CH₃, CF₃, CH₂F, CHF₂, CH₂CH₃ or CH₂CF₃);
- (5) A represents a group selected from 2,2,6,6-tetramethyl-3,6-dihydro-2H-pyran-4-yl, 6-oxa-9-azaspiro[4.5]decanyl, octahydroisoquinolin-(1H)-yl, hexahydropyrrolo[1,2-a]pyrazin-(1H)-yl, pyridazinonyl or, particularly, cyclopentyl, dihydrofuranyl (e.g. 2,3-dihydrofuranyl, 2,5-dihydrofuranyl), 4,5-dihydro-1H-maleimido, dioxanyl, furazanyl, hydantoinyl, imidazolyl, isoxazolyl, isoxazolidinyl, isothiazolyl, oxadiazolyl, oxazolyl, pyrazolyl, pyrrolinyl (e.g. 3-pyrrolinyl), pyrrolyl, pyrrolidinonyl, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetramethylenesulfoxide, tetrazolyl, thiadiazolyl, thiazolyl, thiazolidinyl, thienyl, triazolyl, particularly 2-azabicyclo[4.1.0]heptanyl, 1-azabicyclo[2.2.2]octanyl, benzimidazolyl, benzisothiazolyl, benzisoxazolyl, benzodioxanyl, benzofuranyl, benzo[c]isoxazolindinyl, benzomorpholinyl, 2,1,3-benzoxadiazolyl, benzoxazinyl (including 3,4-dihydro-2H-1,4-benzoxazinyl), benzoxazolidinyl, benzopyrazolyl, benzo[e]pyrimidine, 2,1,3-benzothiadiazolyl, benzothiazolyl, benzothieryl, benzotriazolyl, carbazolyl, chromanyl, chromenyl, cinnolyl, (1Z,2Z,4Z,6Z,8Z)-cyclodecapentaenyl, cyclohexyl, cyclopentenyl, decahydroisoquinolenyl, 2,3-dihydrobenzimidazolyl, 1,3-dihydrobenzo-[c]furanyl, 1,3-dihydro-2,1-benzisoxazolyl, dihydropyranyl (e.g. 3,4-dihydropyranyl, 3,6-dihydropyranyl), 2,3-dihydropyrrolo[2,3-b]pyridinyl, dioxolanyl, hexahydropyrimidinyl, imidazo[2,3-b]thiazolyl, indanyl, indazolyl, indenyl, indolyl, isobenzofuranyl, isochromanyl, isoindolyl, isoindolyl, isothiochromanyl, ketopiperidinyl (e.g. 2-ketopiperidinyl, 3-ketopiperidinyl or 4-ketopiperidinyl), naphtho[1,2-b]furanyl, naphthyridinyl (including 1,6-naphthyridinyl or, particularly, 1,5-naphthyridinyl and 1,8-naphthyridinyl), 1,2- or 1,3-oxazinanyl, oxazolidinyl, phenazinyl, phenothiazinyl, phthalazinyl, piperazinyl, pteridinyl, purinyl, pyranyl, pyridazinyl, pyrrolo[2,3-b]pyridinyl, pyrrolo[5,1-b]pyridinyl, pyrrolo[2,3-c]pyridinyl, quinazolinyl, quinoliziny, quinoxalyl, 4,5,6,7-tetrahydrobenzimidazolyl, 4,5,6,7-tetrahydrobenzopyrazolyl, 5,6,7,8-tetrahydrobenzo-[e]pyrimidine, tetrahydroisoquinolinyl (including 1,2,3,4-tetrahydroisoquinolinyl and 5,6,7,8-tetrahydroisoquinolinyl), tetrahydroquinolinyl (including 1,2,3,4-tetrahydroquinolinyl and 5,6,7,8-tetrahydroquinolinyl), tetrahydropyranyl, tetrahydropyridinyl (e.g. 3,4,5,6-tetrahydropyridinyl), 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, tetrahydrothiophenyl, thieno[5,1-c]pyridinyl, thiochromanyl, thiophenetyl, triazinanyl, 1,3,4-triazolo[2,3-b]pyrimidinyl, particularly, benzoxazolyl, benzodioxolyl, 2,3-dihydrobenzo[b]furanyl, cyclohexyl, furanyl, imidazo[1,2-a]pyridinyl, imidazo[1,5-a]pyridinyl, indolyl, isoquinolinyl, morpholinyl, naphthalenyl (e.g. 1-naphthalenyl, 2-naphthalenyl, 1,2,3,4-tetrahydronaphthyl), piperidinyl, pyrimidinyl, pyrrolidinyl pyrrolo[1,5-a]pyridinyl, pyrazinyl, pyridinonyl (such as 1-1H-pyridin-2-onyl, 3-1H-pyridin-2-onyl, 4-1H-pyridin-2-onyl, 6-1H-pyridin-2-onyl, or, particularly, 4-pyridinonyl), quinolinyl, more particularly, phenyl and pyridinyl (e.g. 2-pyridinyl, 3-pyridinyl, 4-pyridinyl), which cyclic system is optionally substituted by one or more R^{4a} or R^{4b} substituents, as appropriate;
- (6) R^{4a} to R^{4d} represent, independently at each occurrence, halo, CN, C₁₋₆ alkyl (which latter group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₃ alkyl (which latter group is optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₃ alkyl and C₁₋₃ alkoxy), OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}) and B¹-C(G¹)-B²-R⁵ⁱ), Cy³, wherein Cy³ is a group selected from cyclobutyl, cyclopentyl, cyclohexyl, cyclopropenyl, cyclobutenyl, cyclopentenyl, cyclohexenyl, phenyl and, particularly, cyclopropyl, which Cy³ group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₃ alkyl (which group is optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₃ alkyl and C₁₋₃ alkoxy), OR^{6a}, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ and aryl, Het^a, wherein Het^a is a group selected from azetidyl, dihydrofuranyl (e.g. 2,3-dihydrofuranyl, 2,5-dihydrofuranyl), dihydropyranyl (e.g. 3,4-dihydropyranyl, 3,6-dihydropyranyl), 4,5-dihydro-1H-maleimido, dioxanyl, dioxolanyl, furanyl, furazanyl, hexahydropyrimidinyl, hydantoinyl, imidazolyl, isothiazolyl, isoxazolidinyl, isoxazolyl, morpholinyl, 1,2- or 1,3-oxazinanyl, oxazolidinyl, oxazolyl, piperidinyl, piperazinyl, pyranyl, pyrazinyl, pyridazinyl, pyrazolyl, pyridinyl, pyrimidinyl, pyrrolinyl (e.g. 3-pyrrolinyl), pyrrolyl, pyrrolidinyl, pyrrolidinonyl, 3-sulfolenyl, sulfolanyl, tetrahydrofuranyl, tetrahydropyranyl, tetrahydropyridinyl (e.g. 3,4,5,6-tetrahydropyridinyl), 1,2,3,4-tetrahydropyrimidinyl,

3,4,5,6-tetrahydropyrimidinyl, tetrahydrothiophenyl, tetramethylenesulfoxide, tetrazolyl, thiadiazolyl, thiazolyl, thiazolidinyl, thienyl, thiophenethyl, triazolyl and triazinanyl, which Het^a group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₃ alkyl and C₁₋₃ alkoxy), OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-B⁶-R⁷ⁱ and aryl,

OR⁸,

S(O)_rR^{9a},

S(O)₂N(R^{9b})(R^{9c}),

N(R^{9d})S(O)₂R^{9e},

N(R^{9f})(R^{9g})

B⁷-C(O)-B⁸-R^{9h},

B⁷-C(G¹)-B⁸-R^{9h},

=O,

or when two R^{4a}, R^{4b}, R^{4c} or R^{4d} groups are attached to the same carbon atom in a non-aromatic portion of a Cy¹, Het^A, Cy² or Het^B group, they may form, together with the carbon atom to which they are attached, a saturated or unsaturated 3 to 6-membered ring (e.g. dioxolanyl or 1,4-dioxanyl), which ring optionally contains one to three heteroatoms selected from O, S and N, and which ring is optionally substituted by one or more R⁹ⁱ substituents;

(7) G¹ represents, independently at each occurrence, O;

(8) R⁸ represents, independently at each occurrence,

H,

C₁₋₆ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -CN, C₃₋₆ cycloalkyl, aryl, Het^A, -C(O)OR¹⁰, -C(O)R¹¹ and -C(O)N(R^{N1})(R^{N2})

(e.g. R⁸ represents, independently at each occurrence, H or C₁₋₃ alkyl optionally substituted by fluoro (e.g. CH₂F, CHF₂, CH₂CH₃, CH₂CF₃, or particularly CH₃ or CF₃);

(9) each aryl independently represents a phenyl group and is optionally substituted by one or more substituents selected from

halo,

C₁₋₃ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N4})(R^{N5}) and -OR^a, and

-OR^a;

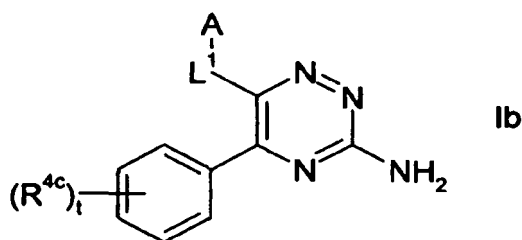
(10) R^a represents independently at each occurrence,

H,

C₁₋₃ alkyl, (which latter group is optionally substituted by one or more substituents selected from halo, OH and C₁₋₄ alkoxy) or

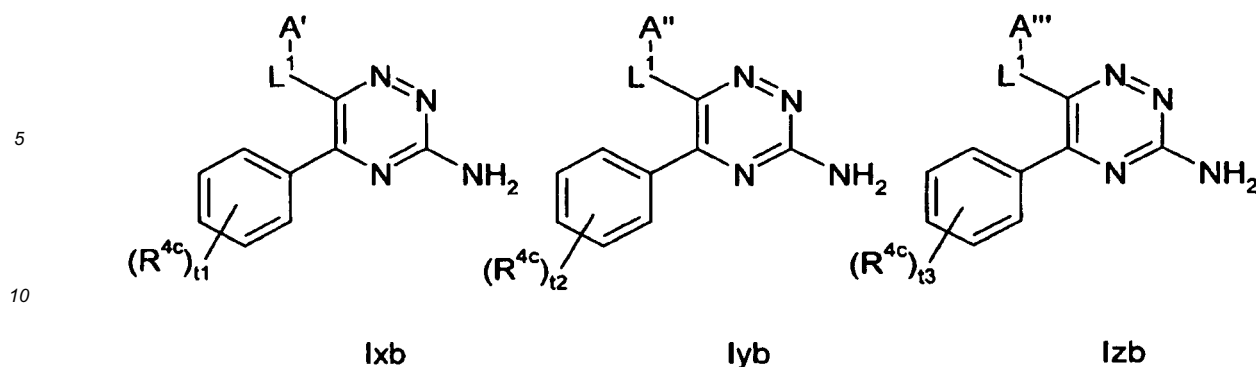
C₃₋₈ cycloalkyl (which latter group is optionally substituted by one or more substituents selected from halo, OH, =O, C₁₋₆ alkyl and C₁₋₄ alkoxy).

[0092] In certain other examples, B represents phenyl and L² represents a direct bond and the compound of formula I may be represented as a compound of formula Ib,



wherein R^{4c}, A and L¹ are as defined above in relation to compounds of formula I (or A1 or, particularly, Ia) and t represents 0 to 5 (e.g. from 0 to 3, or particularly from 0 to 2).

[0093] In certain examples, the compound of formula I may be represented as a compound of formula Ixb, Iyb or Izb,



respectively, wherein t1, t2 and t3 independently represent 0 to 5 (e.g. 0 to 3 or, particularly, 0 to 2), and A', A'', A''', R^{4c} and L¹ are as defined above in relation to compounds of formula I (or A1 or, particularly, Ix, Iy, Iz, Ia, Ixa, Iya or Iza).

[0094] In certain examples, the compounds of formula I (or A1 or, particularly, Ix, Iy, Iz, Ixa, Iya, Iza, Ixb, Iyb, Izb or, more particularly, Ia or Ib) are those in which:

(1) L¹ represents S, NH, CH=CH or, particularly, a direct bond or O (e.g. L¹ represents a direct bond);

(2) A represents a group selected from furanyl, pyrrolidinyl, pyrazolyl, oxazolyl, particularly benzoxazolyl, benzodioxolyl, 2,3-dihydrobenzo[b]furanyl, cyclohexenyl, decahydroisoquinolenyl, imidazo[1,2-a]pyridinyl, imidazo[1,5-a]pyridinyl, indolyl, isoquinolyl, morpholinyl, naphthalenyl (e.g. 1-naphthalenyl, 2-naphthalenyl, 1,2,3,4-tetrahydronaphthyl), piperidinyl, pyrimidinyl, pyrrolo[1,5-a]pyridinyl, pyrazinyl, pyridinonyl (such as 1-1H-pyridin-2-onyl, 3-1H-pyridin-2-onyl, 4-1H-pyridin-2-onyl, 6-1H-pyridin-2-onyl, or, particularly, 4-pyridinonyl), quinolinyl, particularly, phenyl and pyridinyl (e.g. 2-pyridinyl, 3-pyridinyl, 4-pyridinyl), which A group is optionally substituted by one or more R^{4a} or R^{4b} substituents, as appropriate;

(3) R^{4a} and R^{4b} represent, independently at each occurrence, halo (e.g. iodo or, particularly, chloro, bromo or fluoro), CN,

C₁₋₆ alkyl, (which latter group is optionally substituted by one or more substituents selected from aryl or, particularly, halo and OR^{5a}),

Cy³ wherein Cy³ is a group selected from cyclobutyl, cyclopentyl, cyclohexyl phenyl and, particularly, cyclopropyl, which Cy³ group is optionally substituted by one or more substituents halo, nitro, CN, C₁₋₃ alkyl (which group is optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₃ alkyl and C₁₋₃ alkoxy), OR^{6a}, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ and aryl,

Het^a wherein Het^a is a group selected from azetidine and, particularly, dioxanyl and dioxolanyl which Het^a group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₃ alkyl and C₁₋₃ alkoxy), OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-S⁶-R⁷ⁱ and aryl, OR⁸,

S(O)_rR^{9a},
N(R^{9f})(R^{9g})
B⁷-C(G¹)-B⁸-R^{9h},
=O,

or when two R^{4a} or R^{4b} groups are attached to the same carbon atom in a non-aromatic portion of a Cy¹ or Het^A group, they may form, together with the carbon atom to which they are attached, a saturated or unsaturated 5-membered ring (e.g. dioxolanyl), which ring optionally contains one to two heteroatoms selected from O and N, and which ring is optionally substituted by one or more R⁹ⁱ substituents,

(e.g. R^{4a} or R^{4b} represents, independently at each occurrence, CH₂F or, particularly, iodo, butyl, CH(CH₃)OH, OCH₂CH₂CH₃, NH(CH₃), NHC(O)O-*tert*-butyl, morpholino, phenyl or, more particularly, bromo, pyrazolyl, imidazolyl, benzyl, or, particularly, chloro, fluoro, CN, ethyl, methyl, isopropyl, CF₃, CHF₂, CH₂CF₃, CF₂CF₃, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, (CH₂)₃OH, CH₂OH, CH₂OCH₃, N(CH₃)₂, cyclopropyl, dioxolanyl, SCH₃, SCH₃, C(O)CH₃, C(O)CH₂CH₃, C(O)NH₂, C(O)NHCH₃, C(O)N(CH₃)₂, C(O)NHCH₂CH₃, S(O)CH₃, S(O)₂CH₃, S(O)₂CH₂CH₃, NHC(O)CH₃, NHS(O)₂CH₃, =O, or when two R^{4a} or R^{4b} groups are attached to the same carbon atom in a non-aromatic portion of a Cy¹ or Het^A group, they may form dioxolanyl, which ring optionally contains one to two heteroatoms selected from O and N, and which ring is optionally substituted by one or more R⁹ⁱ substituents;

(4) R^{4c} or R^{4d} represent, independently at each occurrence,

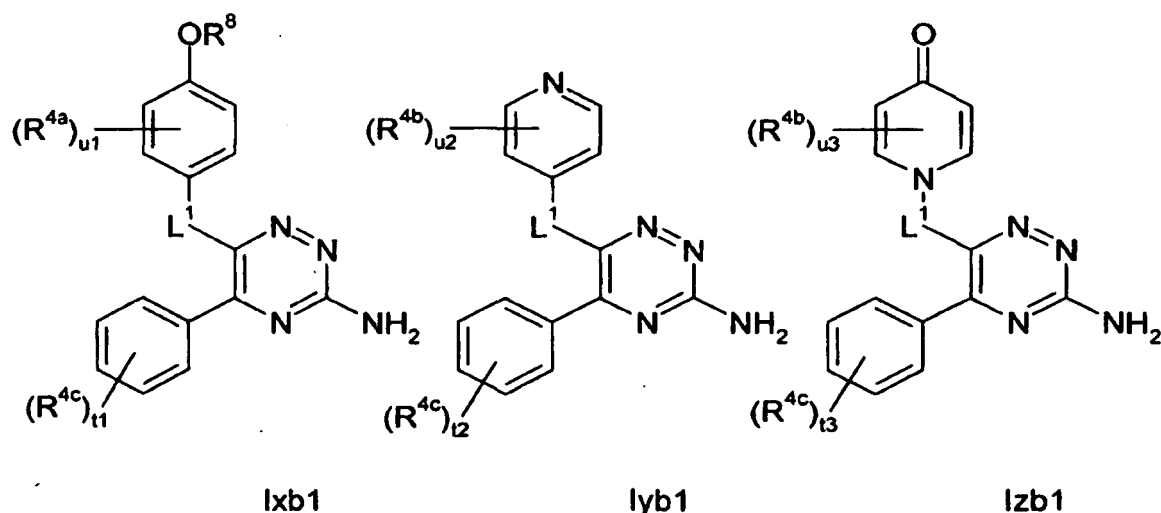
halo

CN,

C₁₋₃ alkyl, (which latter group is optionally substituted by one or more substituents selected from halo and OR^{5a}), OR⁸,N(R^{9f})(R^{9g}) orB⁷-C(G¹)-B⁸-R^{9h}

(e.g. R^{4c} or R^{4d} represents, independently at each occurrence, CH₂OCH₃, or particularly, bromo imidazolyl, S(O)₂CH₃, =O or more particularly, chloro, fluoro, CN, methyl, ethyl, n-propyl, isopropyl, CF₃, CHF₂, CH₂CF₃, OH, OCH₃, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, N(CH₃)₂, CH₂OH, CH₂OCH₃, CH₂CN, C(O)CH₃, C(O)CH₂CH₃, NHC(O)CH₃).

[0095] In certain examples, the compound of formula lxb, lyb or lzb may be represented as a compound of formula lxb1, lyb1 or lzb1,

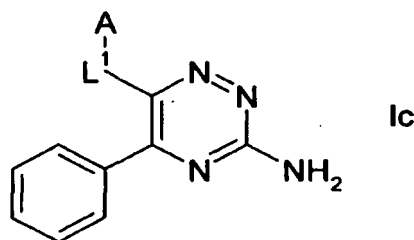


respectively, wherein u1, u2 and u3 independently represent 0 to 4 (e.g. 0 to 3 or, particularly 1 or 2) and L¹, R^{4a}, R^{4b}, R^{4c}, R⁸ t1, t2 and t3 are as defined above in relation to compounds of formula I (or A1 or, particularly, lx, ly, lz, la, lxa, lya, lza, lb, lxb, lyb or lzb) (e.g. L¹ represents a bond and R^{4a}, R^{4b}, R^{4c} and R⁸ are as defined above in relation to compounds of formula I (or A1 or, particularly, lx, ly, lz, la, lxa, lya, lza, lb, lxb, lyb or lzb)).

[0096] In certain further examples, the compound of formula lb, lxb; lyb, lzb, lxb1, lyb1 or lzb1 (e.g. the compound of lyb1) is a compound in which:

- (1) t, t1, t2 or t3 represents 3 or, particularly, 2, 1 or 0; and
- (2) the phenyl group that is substituted by (R^{4c})t, (R^{4c})t1, (R^{4c})t2 or (R^{4c})t3 is unsubstituted in the *ortho*-positions relative to the point of attachment to the 1,2,4-triazine group.

[0097] In certain other examples, B represents unsubstituted phenyl and L² represents a direct bond and the compound of formula I may be represented as a compound of formula lc,



wherein A and L¹ are as defined above in relation to compounds of formula I (or A1 or, particularly, la or lb).

[0098] Examples that may be mentioned include those in which the compounds of formula I (or A1 or, particularly, lx, ly, lz, lxa, lya, lza, lxb, lyb, lzb, lxb1, lyb1, lzb1, or, more particularly, la, lb or lc) are those in which:

(1) L¹ represents a bond or O (e.g. L¹ represents a direct bond);

(2) A represents furanyl, imidazolyl, ketopiperidinyl (e.g. 2-ketopiperidinyl, 3-ketopiperidinyl or 4-ketopiperidinyl), pyrazinyl, pyrrolidinyl, pyrrolidinonyl, particularly, cyclohexenyl, pyridinonyl (such as 1-1*H*-pyridin-2-onyl, 3-1*H*-pyridin-2-onyl, 4-1*H*-pyridin-2-onyl, 6-1*H*-pyridin-2-onyl, or, particularly, 4-pyridinonyl), or more particularly morpholinyl, piperidinyl, phenyl or pyridinyl (e.g. 2-pyridinyl, 3-pyridinyl, 4-pyridinyl), which A group is optionally substituted by one or more R^{4a} or R^{4b} substituents, as appropriate;

(3) R^{4a} or R^{4b} represents, independently at each occurrence, CH₂F, cyclopropyl, N(Me)₂, Br, =O, azetidine, or, particularly, chloro, fluoro, ethyl, methyl, CF₃, CHF₂, CH₂CF₃, CF₂CF₃, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃ (e.g. R^{4a} or R^{4b} represents, independently at each occurrence, chloro, fluoro, ethyl, methyl, CF₃, CHF₂, CH₂CF₃, CF₂CF₃).

[0099] Further examples that may be mentioned relate to compounds of formula I (or A1 or, particularly, Ia, Ib or, more particularly, Ic) in which:

(1) L¹ represents a direct bond;

(2) A represents a non-aromatic, 6-membered Het^A ring containing at least one N atom, which Het^A group is optionally substituted by one or more R^{4b} substituents, wherein the Het^A ring is attached to the remainder of the molecule by the essential N atom.

[0100] These compounds include those in which L¹ represents a direct bond, A represents piperidinyl or morpholinyl optionally substituted by one or more R^{4b} substituents, R¹ represents H, L² represents a direct bond and B represents phenyl optionally substituted by one or more R^{4c} substituents).

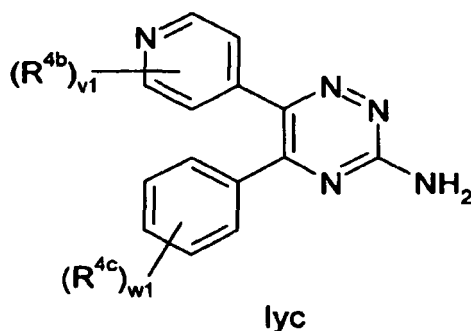
[0101] Still further examples that may be mentioned relate to compounds of formula I (or A1 or, particularly, Ia, Ib or, more particularly, Ic) in which:

(1) L¹ represents O;

(2) A represents a 6-membered Cy¹ group which is optionally substituted by one or more R^{4a} substituents.

[0102] These compounds include those in which L¹ represents O, A represents pyrazinyl, pyridazinyl, pyridinyl, pyrimidinyl or, particularly, phenyl optionally substituted by one or more R^{4a} substituents, R¹ represents H, L² represents a direct bond and B represents phenyl optionally substituted by one or more R^{4c} substituents.

[0103] In certain other examples, B represents phenyl and L¹ and L² represent a direct bond and the compound of formula I may be represented as a compound of formula lyc,



wherein v1 represents 0 to 4 (e.g. 0 to 3 or, particularly 1 or 2), w1 independently represents 0 to 5 (e.g. 0 to 3 or, particularly, 0 to 2), and R^{4b} and R^{4c} are as defined above in relation to compounds of formula I (or A1 or, particularly, ly, Ia, Iya, Ib, Iyb, Iyb1 or Ic).

[0104] Examples that may be mentioned relate to compounds of formula lyc in which:

(1) R^{4b} represents, independently at each occurrence, NMe₂, Br, azetidin-1-yl, CH₂F or, particularly, chloro, fluoro, ethyl, methyl, cyclopropyl, CF₃, CHF₂, CH₂CF₃, CF₂CF₃ or OCH₃;

(2) R^{4c} represents, independently at each occurrence, CN, chloro, fluoro, ethyl, methyl, CH₂OCH₃, CF₃, CHF₂, CH₂CF₃, CF₂CF₃, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃;

(3) v1 represents 0 to 4;

(4) w1 represents 0 to 3.

[0105] Further examples that may be mentioned relate to compounds of formula lyc in which:

- (1) R^{4b} represents, independently at each occurrence, NMe₂, Br, azetidin-1-yl, CH₂F, CHF₂ or, particularly, cyclopropyl, OCH₃ or, more particularly, chloro, methyl or CF₃;
- (2) R^{4c} represents, independently at each occurrence, CN, chloro, fluoro, CH₂OCH₃, OCH₃, OCH₂CH₃, OCH₂F or OCHF₂;
- (3) v1 represents 1 or 2;
- (4) w1 represents 0 to 3 (e.g. 3 or, particularly, 2, 1 or 0);
- (5) the R^{4b} substituent(s) is (are) attached to the 3- and/or 5-position(s) of the pyridyl group, relative to the point of attachment to the 1,2,4-triazine group;
- (6) the phenyl ring is either unsubstituted or is substituted by one to three R^{4c} substituents attached in the *meta*- and/or *para*-positions relative to the point of attachment to the 1,2,4-triazine group.

[0106] Still further examples that may be mentioned relate to compounds of formula lyc in which:

- (1) R^{4b} represents, independently at each occurrence, NMe₂, Br, azetidin-1-yl, CH₂F, CHF₂ or, particularly, cyclopropyl, OCH₃ or, more particularly, chloro, methyl or CF₃;
- (2) R^{4c} represents, independently at each occurrence, CN, chloro, fluoro, CH₂OCH₃, OCH₃, OCH₂CH₃, OCH₂F or OCHF₂;
- (3) v1 represents 1 or 2;
- (4) w1 represents 0 to 3 (e.g. 3 or, particularly, 2, 1 or 0);
- (5) the R^{4b} substituent(s) is (are) attached to the 3- and/or 5-position(s) of the pyridyl group, relative to the point of attachment to the 1,2,4-triazine group; and
- (6) the phenyl ring is either unsubstituted or is substituted by one to three R^{4c} substituents attached in the *meta*- and/or *para*-positions relative to the point of attachment to the 1,2,4-triazine group.

[0107] Yet further examples that may be mentioned relate to compounds of formula lyc in which:

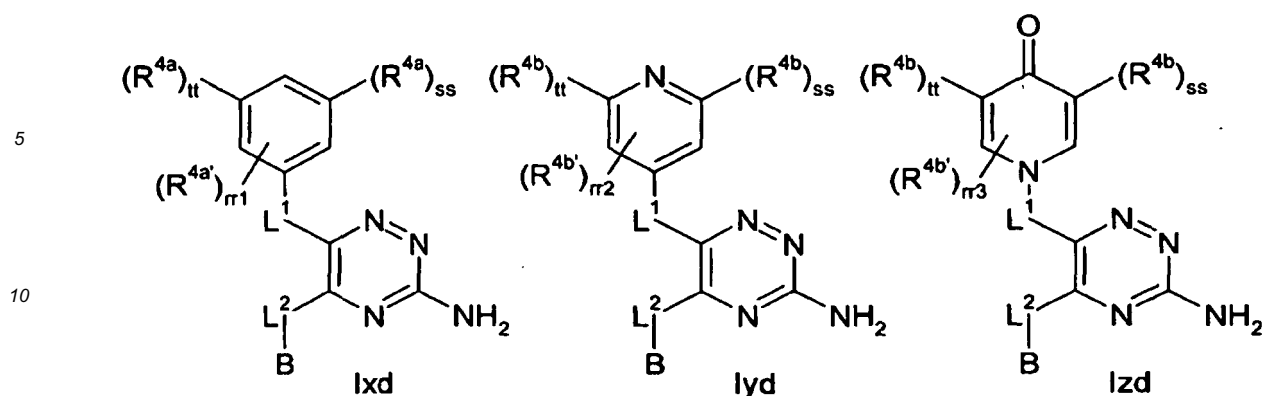
- (1) v1 represents 1 and the R^{4b} substituent is attached to the 3-position of the pyridyl group, relative to the point of attachment to the 1,2,4-triazine group;
- (2) v1 represents 2 and the R^{4b} substituents are attached to the 3- and 5-positions of the pyridyl group, relative to the point of attachment to the 1,2,4-triazine group.

[0108] Compounds of formula I (or Ix, ly Iz, Ixa, Iya, Iza, Ixb, Iyb, Izb, Ixb1, Iybl, Izb1 and lyc or, more particularly, Ia, Ib or Ic) that may be mentioned include those wherein, when A', A'', A''' or, particularly, A is a substituted 6-membered Cy¹ or Het^A group (or Cy¹, Het^{A'}, Het^{A''} or Het^{A'''} group), the substituent(s) is (are) in the *ortho*- or, particularly, *meta*- or *para*-position(s), relative to the point of attachment to the rest of the molecule (e.g. when A represents a substituted 6-membered Cy¹ or Het^A group then there is at least one substituent in the *meta*- or *para*-positions and, optionally, a substituent in the *ortho*-position of A or, more particularly, there is at least one substituent in the *meta*- or *para*-position and no substituents in the *ortho*-position of A relative to the point of attachment to the rest of the molecule). In particular examples, the 6-membered Cy¹, Cy^{1'}, Het^A, Het^{A'}, Het^{A''} or Het^{A'''} group has:

- no substituents in the *ortho*-positions;
- a substituent in one or both of the *meta*-positions; and, optionally, for Cy¹, Cry^{1'} or Het^A
- a substituent in the *para*-position.

[0109] Compounds of the invention are compounds of formula lyd as defined in Claim 1.

[0110] We also disclose examples in which the compound of formula I (or A1 or, particularly, Ix, ly Iz, Ia, Ixa, Iya, Iza, Ib, Ixb, Iyb, Izb, Ixb1, Iyb1, Izb1, Ic or lyc) may be represented as a compound of formula Ixd, lyd or Izd,



15 respectively, wherein:

rr1 represents 0 to 3 (e.g. 1 or, particularly 0);

rr2 and rr3 independently represent 0 to 2 (e.g. 1 or, particularly 0);

ss and tt independently represent, at each occurrence 0 or 1, provided that ss and tt do not both represent 0;

R^{4a'} takes the same definition as R^{4a};

R^{4b'} takes the same definition as R^{4b}; and

B, L¹, L², R^{4a} and R^{4b} are as defined above in relation to compounds of formula I (or A1 or, particularly, lx, ly lz, la, lxa, lya, lza, lb, lxb, lyb, lzb, lxb1, lyb1, lc or lyc).

[0111] Embodiments of the invention that may be mentioned relate to compounds of formula lyd according to Claim 1 in which R^{4b} and R^{4b'} independently represent cyclopropyl, iodo, bromo, chloro, fluoro, ethyl, methyl, d₃-methyl, isopropyl, -C≡CH, phenyl, CF₃, CHF₂, CH₂F, CH₂CF₃, CF₂CF₃, CN, =O, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CF₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃, CH(CH₃)OH, C(CH₃)₃OH, CH₂CH₂OH, NH₂, N(CH₃)₂, N(H)CH₂CH₃, N(H)C(O)CH₃, C(O)CH₃, C(O)N(CH₃)₂, S(O)₂CH₃, S(O)CH₃, SCH₃, S(O)₂CF₃, azetidine, morpholine or dioxolane (e.g. OH, chloro, fluoro, bromo, ethyl, methyl, d₃-methyl, CF₃, CHF₂, CH₂F, CH₂CF₃, CF₂CF₃, or N(H)C(O)CH₃).

[0112] Embodiments of the invention that may be mentioned relate to compounds of formula lyd according to Claim 1 in which R^{4b} and R^{4b'} represent, independently at each occurrence

(a) halo,

(b) CN,

(c) C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ and Het¹ (e.g. one or more substituents selected from nitro, CN, OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ and Het¹),

(d) Cy³, which Cy³ group is optionally substituted by one or more substituents selected from nitro, CN, OR^{6a}, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ and Het²,

(e) Het^a, which Het^a group is optionally substituted by one or more substituents selected from halo, nitro, CN, OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-B⁶-R⁷ⁱ and Het³,

(f) OR⁸,

(g) S(O)_rR^{9a},

(h) S(O)₂N(R^{9b})(R^{9c}),

(i) N(R^{9d})S(O)₂R^{9e},

(j) N(R^{9f})(R^{9g}) or

(k) B⁷-C(G¹)-B⁸-R^{9h},

wherein R^{5a} to R⁵ⁱ, R^{6a} to R⁶ⁱ, R^{7a} to R⁷ⁱ, R⁸, R^{9a} to R^{9h}, Cy³, Het¹ to Het³, Het^a, B¹ to B⁸, G¹, q and r are as defined in Claim 1.

[0113] Embodiments of the invention that may be mentioned relate to compounds of formula lyd according to Claim 1 in which:

(1) R^{4b} represents, independently at each occurrence, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃, NH₂, NHCH(CH₃)₂, NHCH₃, NHCH₂CH₃,

NHCH₂CH₃, NH(CH(CH₃)₂)₂, NH(CH₃)₂, NH(CH₂CH₃)₂ or NH(CH₂CH₃)₂;

(2) the sum of ss and tt is 1;

(3) rr2 is 0.

[0114] Further embodiments of the invention that may be mentioned relate to compounds of formula I according to Claim 1 in which:

(1) R^{4b} represents, independently at each occurrence, CH₂F or, particularly, cyclopropyl, chloro, fluoro, ethyl, methyl, CF₃, CHF₂, CH₂CF₃, CF₂CF₃, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃;

(2) ss and tt are both 1;

(3) rr2 is 0.

[0115] Still further embodiments of the invention that may be mentioned relate to compounds of formula I according to Claim 1 in which:

(1) R^{4b} represents, independently at each occurrence, CH₂F or, particularly, cyclopropyl, chloro, fluoro, ethyl, methyl, CF₃, CHF₂, CH₂CF₃, CF₂CF₃, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃ (e.g. chloro, fluoro, ethyl, methyl, CF₃, CHF₂, CH₂CF₃, CF₂CF₃);

(2) ss and tt are both 1; and

(3) rr2 is 0.

[0116] Embodiments of the invention that may be mentioned relate to compounds of formula I in which R^{4b} and R^{4b'} are as hereinbefore defined and the compounds are compounds of formula A1 (i.e. wherein L¹ and L² both represent direct bonds; and B represents Cy^{BB} or Het^{BB} as defined in Claim 1. In such embodiments of the invention, R^{4b} and R^{4b'} independently represent cyclopropyl, iodo, bromo, chloro, fluoro, ethyl, methyl, d₃-methyl, iso-propyl, -C≡CH, phenyl, CF₃, CHF₂, CH₂F, CH₂CF₃, CF₂CF₃, CN, =O, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CF₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃, CH(CH₃)OH, C(CH₃)₃OH, CH₂CH₂OH, NH₂, N(CH₃)₂, N(H)CH₂CH₃, N(H)C(O)CH₃, C(O)CH₃, C(O)N(CH₃)₂, S(O)₂CH₃, S(O)CH₃, SCH₃, S(O)₂CF₃, azetidine, morpholine or dioxolane (e.g. OH, chloro, fluoro, bromo, ethyl, methyl, d₃-methyl, CF₃, CHF₂, CH₂F, CH₂CF₃, CF₂CF₃ or N(H)C(O)CH₃).

[0117] Other compounds of formula I that may be mentioned include the compounds of the examples described hereinafter. Thus, compounds that may be mentioned include those in which the compound of formula I is a compound selected from the list:

- (i) 5,6-diphenyl-1,2,4-triazin-3-amine; or, particularly,
- (ii) 6-(2-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
- (iii) 6-(3-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
- (iv) 6-(4-fluorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
- (v) 6-(5-chloro-2-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
- (vi) 6-(3-chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
- (vii) 6-(4-chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
- (viii) 5-phenyl-6-(piperidin-1-yl)-1,2,4-triazin-3-amine;
- (ix) 6-(2-chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
- (x) 6-(furan-2-yl)-5-phenyl-1,2,4-triazin-3-amine;
- (xi) 6-phenoxy-5-phenyl-1,2,4-triazin-3-amine;
- (xii) 6-(morpholin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
- (xiii) 6-(3-methylpiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine;
- (xiv) 6-(4,4-difluoropiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine;
- (xv) 6-(3-fluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
- (xvi) 6-(4-fluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
- (xvii) 6-(2-fluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
- (xviii) 6-(4-methoxyphenoxy)-5-phenyl-1,2,4-triazin-3-amine;
- (xix) 6-(3-chlorophenyl)-5-(2,4-difluorophenyl)-1,2,4-triazin-3-amine;
- (xx) 5-phenyl-6-(3,4,5-trifluorophenyl)-1,2,4-triazin-3-amine;
- (xxi) 6-(2,6-dimethylmorpholin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
- (xxii) 5-phenyl-6-[3-(trifluoromethyl)phenoxy]-1,2,4-triazin-3-amine;
- (xxiii) 6-(3-chlorophenyl)-5-(3-methoxyphenyl)-1,2,4-triazin-3-amine;
- (xxiv) 5-phenyl-6-[3-(trifluoromethyl)phenyl]-1,2,4-triazin-3-amine;

- (xxv) 6-(3,5-difluorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (xxvi) 5-phenyl-6-[2-(propan-2-yl)phenoxy]-1,2,4-triazin-3-amine;
 (xxvii) 6-[3-fluoro-5-(trifluoromethyl)phenyl]-5-phenyl-1,2,4-triazin-3-amine;
 (xxviii) 6-(3,5-dichlorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
 5 (xxix) 6-(5-chloropyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (xxx) 6-(3-chloro-4-fluorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (xxxi) 6-(3-fluoro-5-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (xxxii) 6-[4-fluoro-3-(trifluoromethyl)phenoxy]-5-phenyl-1,2,4-triazin-3-amine;
 (xxxiii) 5-phenyl-6-[3-(trifluoromethoxy)phenoxy]-1,2,4-triazin-3-amine;
 10 (xxxiv) 6-(3-chlorophenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (xxxv) 6-(3-chloro-5-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (xxxvi) 6-(3-aminophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
 (xxxvii) 6-(3-chlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
 (xxxviii) 6-(3,3-dimethylpiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine;
 15 (xxxix) 6-(3-bromophenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (xl) 6-(3,5-dichlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
 (xli) 5-phenyl-6-[3-(trifluoromethyl)piperidin-1-yl]-1,2,4-triazin-3-amine;
 (xlii) 6-(1H-indol-6-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (xliii) 6-(3,5-difluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
 20 (xliv) 6-(octahydroquinolin-1(2H)-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (xlv) 6-(3,4-dichlorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (xlvi) 6-(3-fluorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (xlvii) 6-(1,3-benzodioxol-5-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (xlviii) 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)benzonitrile;
 25 (xlix) 6-(3,5-dimethoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (i) 6-(3,5-dimethylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (ii) 6-(3,4-dimethylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (iii) 6-[3-(dimethylamino)phenyl]-5-phenyl-1,2,4-triazin-3-amine;
 (liii) N-[3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)phenyl]acetamide;
 30 (liv) N-[3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)phenyl]methanesulfonamide;
 (lv) 6-(3-trifluoromethoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lvi) 6-(1-benzofuran-5-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (lvii) 5-phenyl-6-[3-(propan-2-yl)phenyl]-1,2,4-triazin-3-amine;
 (lviii) 6-(3,5-dichlorophenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 35 (lix) 6-(3,5-bis(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lx) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-methoxyphenol;
 (lxi) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2,6-dimethylphenol;
 (lxii) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-chlorophenol;
 (lxiii) 6-(2-chloropyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 40 (lxiv) 6-(3-(methylsulfonyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxv) 6-(3,5-dichloro-4-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxvi) 6-(4-methoxy-3-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxvii) 6-(3-chloro-5-(dimethylamino)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxviii) 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-(trifluoromethyl)benzonitrile;
 45 (lxix) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 (lxx) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxi) 6-(3-chloro-5-methylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxii) 6-(3-(methylthio)-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxiii) 6-(3-methoxy-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 50 (lxxiv) 6-(3-ethoxy-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxv) 6-(3-tert-butyl-5-methylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxvi) 6-(2-chloro-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxvii) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-chlorobenzonitrile;
 (lxxviii) 6-(3-ethylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 55 (lxxix) 6-(2-methoxy-6-(trifluoromethyl)pyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxx) 6-(3-methyl-5-(trifluoromethoxy)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxxi) 6-(3-(1,3-dioxolan-2-yl)-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxxii) 5-phenyl-6-(3-(2,2,2-trifluoroethoxy)phenyl)-1,2,4-triazin-3-amine;

- (lxxxiii) 6-(3-(methoxymethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxxiv) 5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-1-methylpyridin-2(1H)-one;
 (lxxxv) 6-(3-methyl-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (lxxxvi) 6-(2-methoxypyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 5 (lxxxvii) 1-(3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)phenyl)ethanone;
 (lxxxviii) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)benzamide;
 (lxxxix) 6-(4-fluoro-3-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (xc) 6-(4-fluoro-3-methylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (xci) 6-(3-bromo-5-chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine;
 10 (xcii) 6-(naphthalen-2-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (xciii) 5-phenyl-6-m-tolyl-1,2,4-triazin-3-amine;
 (xciv) 5-phenyl-6-(pyridin-4-yl)-1,2,4-triazin-3-amine;
 (xcv) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)phenol;
 (xcvi) 6-(2,6-dimethoxypyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 15 (xcvii) 6-(2,6-dimethylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (xcviii) 5-phenyl-6-(2-(trifluoromethyl)pyridin-4-yl)-1,2,4-triazin-3-amine;
 (xcix) 6-(2-cyclopropylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine,
 (c) 5-phenyl-6-(2,2,6,6-tetramethyl-3,6-dihydro-2H-pyran-4-yl)-1,2,4-triazin-3-amine;
 (ci) 6-(5-chloro-2-fluoro-3-methylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 20 (cii) 6-(2-dichloropyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (ciii) 6-(3-bromo-5-(trifluoromethoxy)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (civ) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-chloro-6-methoxyphenol;
 (cv) 6-(3,5-dichloro-4-ethoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (cvi) 6-(6-amino-5-(trifluoromethyl)pyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine;
 25 (cvii) 4-(3-amino-5-(3-fluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 (cviii) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
 (cix) 6-(2-chloro-6-methylpyridin-4-yl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
 (cx) 4-(3-amino-5-(4-fluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 (cxi) 6-(3-chloro-5-propoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 30 (cxii) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (cxiii) 6-(2-chloropyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (cxiv) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (cxv) 4-(3-amino-5-(4-chlorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 (cxvi) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(4-chlorophenyl)-1,2,4-triazin-3-amine;
 35 (cxvii) 5-(4-chlorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 (cxviii) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-chlorophenyl)-1,2,4-triazin-3-amine;
 (cxix) 4-(3-amino-5-(3-chlorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 (cxx) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3-chlorophenyl)-1,2,4-triazin-3-amine;
 (cxxi) 5-(3-chlorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 40 (cxxii) 6-(2-chloro-6-methylpyridin-4-yl)-5-(3-chlorophenyl)-1,2,4-triazin-3-amine;
 (cxxiii) 4-(3-amino-6-(3-chloro-5-(trifluoromethyl)phenyl)-1,2,4-triazin-5-yl)benzonitrile;
 (cxxiv) 4-(3-amino-6-(2-chloro-6-methylpyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile;
 (cxxv) 4-(3-amino-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 (cxxvi) 5-(3-chloro-5-fluorophenyl)-6-(2-chloro-6-methylpyridin-4-yl)-1,2,4-triazin-3-amine;
 45 (cxxvii) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine;
 (cxxviii) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine;
 (cxxix) 6-(2-chloro-6-methylpyridin-4-yl)-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine;
 (cxxx) 4-(3-amino-5-(3,5-difluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 (cxxxii) 4-(3-amino-5-(3-chloro-4-fluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 50 (cxxxiii) 5-(3-chloro-4-fluorophenyl)-6-(2-chloro-6-methylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (cxxxiv) 5-(3-chloro-4-fluorophenyl)-6-(3-chloro-5-(trifluoromethyl)phenyl)-1,2,4-triazin-3-amine;
 (cxxxv) 4-(3-amino-5-(3,4-difluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 (cxxxvi) 6-(2-chloro-6-methylpyridin-4-yl)-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine;
 55 (cxxxvii) 6-(2-chloropyridin-4-yl)-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine;
 (cxxxviii) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine;
 (cxxxix) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(4-(methoxymethyl)phenyl)-1,2,4-triazin-3-amine;
 (cxli) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-(methoxymethyl)phenyl)-1,2,4-triazin-3-amine;

- (cxli) 6-(2,6-dimethylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (cxlii) 6-(3-chloro-5-methylphenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (cxliii) 6-(6-fluoropyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (cxliv) 6-(3,5-dimethylisoxazol-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 5 (cxlv) 6-(3,5-diisopropylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (cxlvi) 6-(3-fluoro-5-(2,2,2-trifluoroethoxy)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (cxlvii) N-(4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-(trifluoromethyl)phenyl)acetamide;
 (cxlviii) 5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-fluorobenzonitrile;
 (cxlix) 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-N,N-dimethylbenzamide;
 10 (cl) 6-(1-methyl-1H-pyrazol-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (cli) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-1-methylpyridin-2(1H)-one;
 (clii) 6-(3-(morpholin-4-yl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (cliii) 6-(1-benzyl-1H-pyrazol-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (cliv) 6-(2-methoxypyrimidin-5-yl)-5-phenyl-1,2,4-triazin-3-amine;
 15 (clv) 6-(6-methoxypyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (clvi) 6-(3-(methylsulfinyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
 (clvii) 4-(3-amino-6-(2-chloropyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile;
 (clviii) 4-(3-amino-5-(4-(methoxymethyl)phenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
 (clix) 6-(2-chloropyridin-4-yl)-5-(4-(methoxymethyl)phenyl)-1,2,4-triazin-3-amine;
 20 (clx) 6(E)-5-phenyl-6-styryl-1,2,4-triazin-3-amine;
 (clxi) 6-(3-amino-5-phenyl-1,2,4-triazin-6-yl)indolin-2-one;
 (clxii) tert-butyl 5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)pyridin-2-yl(methyl)carbamate;
 (clxiii) 6-(3-methoxypiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (clxiv) 6-(3-ethynylpiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine;
 25 (clxv) 6-(2,6-dimethylmorpholin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (clxvi) 6-(2-ethylmorpholino)-5-phenyl-1,2,4-triazin-3-amine;
 (clxvii) 5-phenyl-6-(6-oxa-9-azaspiro[4.5]decan-9-yl)-1,2,4-triazin-3-amine;
 (clxviii) 6-(2,2-diethylmorpholino)-5-phenyl-1,2,4-triazin-3-amine;
 (clxix) 6-(2,2-dimethylmorpholino)-5-phenyl-1,2,4-triazin-3-amine;
 30 (clxx) (1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-3-methylpiperidin-3-yl)methanol;
 (clxxi) 6-(3-(methoxymethyl)piperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (clxxii) 1-(1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)piperidin-3-yl)ethanol;
 (clxxiii) (1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)piperidin-3-yl)methanol;
 (clxxiv) 1-(1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)piperidin-3-yl)ethanone;
 35 (clxxv) 6-(octahydroisoquinolin-2(1H)-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (clxxvi) N6-(4-methyl-1,3-thiazol-2-yl)-5-phenyl-1,2,4-triazine-3,6-diamine;
 (clxxvii) 5-phenyl-6-[4-(trifluoromethyl)piperidin-1-yl]-1,2,4-triazin-3-amine;
 (clxxviii) 5-phenyl-6-(3-phenylpiperidin-1-yl)-1,2,4-triazin-3-amine;
 (clxxix) (4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)morpholin-2-yl)methanol;
 40 (clxxx) 5-phenyl-6-(3-(propoxymethyl)pyrrolidin-1-yl)-1,2,4-triazin-3-amine;
 (clxxxi) 2-(1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)piperidin-3-yl)propan-2-ol;
 (clxxxii) 6-(hexahydropyrrolo[1,2-a]pyrazin-2(1H)-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (clxxxiii) 1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-3-ethylpiperidin-3-ol;
 (clxxxiv) 2-(4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)morpholin-2-yl)ethanol;
 45 (clxxxv) 6-(3,5-dimethylphenoxy)-5-phenyl-1,2,4-triazin-3-amine;
 (clxxxvi) 6-(3-chloro-5-methoxyphenoxy)-5-phenyl-1,2,4-triazin-3-amine;
 (clxxxvii) 1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)pyridin-4(1H)-one;
 (clxxxviii) 6-(4-methylphenoxy)-5-phenyl-1,2,4-triazin-3-amine;
 (clxxxix) 6-(4-chlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
 50 (cxc) 6-(3,4-difluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
 (cxci) 6-[(6-methoxypyridin-3-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine;
 (cxcii) 6-[(2-methylpyridin-3-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine;
 (cxci) 6-[(6-chloropyridin-3-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine;
 (cxciv) 4-[(3-amino-5-phenyl-1,2,4-triazin-6-yl)oxy]benzonitrile;
 55 (cxcv) 6-[[1-methyl-3-(trifluoromethyl)-1H-pyrazol-5-yl]oxy]-5-phenyl-1,2,4-triazin-3-amine;
 (cxcvi) 6-[(1-methyl-1H-benzimidazol-5-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine;
 (cxcvii) 1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)pyridazin-4(1H)-one;
 (cxcviii) 1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-3,5-dichloropyridin-4(1H)-one;

- (cxcix) 6-(2,4-difluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
(cc) 5-phenyl-6-(pyridin-3-yloxy)-1,2,4-triazin-3-amine;
(cci) 6-[(4-methylpyridin-3-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine;
(ccii) 5-phenyl-6-(p-tolylthio)-1,2,4-triazin-3-amine;
5 (cciii) 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenol;
(cciv) 6-(3-chloro-5-ethenylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
(ccv) 6-(3-chloro-5-cyclopropylphenyl)-5-phenyl-1,2,4-triazin-3-amine;
(ccvi) 6-(3,5-dichlorophenyl)-5-(3-methylpiperidin-1-yl)-1,2,4-triazin-3-amine;
(ccvii) 6-(6-(methylamino)pyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine;
10 (ccviii) 5-(3-chloro-5-fluorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
(ccix) 6-(2-chloropyridin-4-yl)-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine;
(ccx) 4-(3-amino-5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile;
(ccxi) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-3-amine;
(ccxii) 6-(2-chloropyridin-4-yl)-5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-3-amine;
15 (ccxiii) 6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-3-amine;
(ccxiv) 5-(3-amino-5-(3-fluorophenyl)-1,2,4-triazin-6-yl)-2-chlorophenol;
(ccxv) 4-[3-amino-6-(3-chloro-4-hydroxyphenyl)-1,2,4-triazin-5-yl]benzonitrile;
(ccxvi) 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-(trifluoromethoxy)phenol;
(ccxvii) 5-(3-chloro-5-fluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
20 (ccxviii) 5-(3,5-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
(ccxix) 5-(3,4-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
(ccxx) 5-(3-chloro-4-fluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
(ccxxi) 5-(4-(difluoromethoxy)phenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
(ccxxii) 6-(2,6-dimethylpyridin-4-yl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
25 (ccxxiii) 5-(4-chlorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
(ccxxiv) 4-(3-amino-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile;
(ccxxv) 5-(3-chlorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
(ccxxvi) 6-(2,6-dimethylpyridin-4-yl)-5-(4-(methoxymethyl)phenyl)-1,2,4-triazin-3-amine;
(ccxxvii) 4-(3-amino-6-(3-chloro-4-hydroxy-5-methoxyphenyl)-1,2,4-triazin-5-yl)benzonitrile;
30 (ccxxviii) 5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-chlorophenol;
(ccxxix) 6-(6-chloropyridin-2-yl)-5-phenyl-1,2,4-triazin-3-amine;
(ccxxx) 6-(4-cyclopropylpyridin-2-yl)-5-phenyl-1,2,4-triazin-3-amine;
(ccxxxi) 5-phenyl-6-(6-(trifluoromethyl)pyridin-2-yl)-1,2,4-triazin-3-amine;
(ccxxxii) 5-phenyl-6-(4-(trifluoromethyl)pyridin-2-yl)-1,2,4-triazin-3-amine;
35 (ccxxxiii) 6-(6-cyclopropylpyridin-2-yl)-5-phenyl-1,2,4-triazin-3-amine;
(ccxxxiv) 5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)pyrazin-2-ol;
(ccxxxv) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2,6-diiodophenol;
(ccxxxvi) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-iodophenol;
(ccxxxvii) 6-(3-methoxy-5-(trifluoromethoxy)phenyl)-5-phenyl-1,2,4-triazin-3-amine;
40 (ccxxxviii) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-(propan-2-yloxy)phenol;
(ccxxxix) 5-(3-fluorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
(ccxl) 6-(2,4-dichlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine;
(ccxli) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine;
(ccxlii) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine;
45 (ccxliii) 6-[2-(ethylamino)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(ccxliv) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
(ccxlv) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
(ccxlvi) 6-[2-[ethyl(methyl)amino]-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(ccxlvii) 6-[2-(dimethylamino)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
50 (ccxlviii) 1-[6-(2,6-d6-dimethylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
(ccxlix) 6-[2-d3-methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cccl) 5-(4-fluorophenyl)-6-[2-d3-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cccli) 6-(2,6-dimethylpyridin-4-yl)-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
(ccclii) 6-(2-chloro-6-methylpyridin-4-yl)-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
55 (cccliii) 6-(2,6-dimethylpyridin-4-yl)-5-(4-methoxyphenyl)-1,2,4-triazin-3-amine;
(cccliv) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-methoxyphenyl)-1,2,4-triazin-3-amine;
(ccclv) 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(ccclvi) 6-[2-chloro-6-(difluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;

(cclvii) 6-[2-chloro-6-(fluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclviii) 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
(cclix) 6-[2,6-bis(fluoromethyl)pyridine-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclx) 6-[2-(fluoromethyl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
5 (cclxi) 6-(2-chloro-6-methylpyridin-4-yl)-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine;
(cclxii) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
(cclxiii) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine;
(cclxiv) 6-[2-cyclopropyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxv) 6-[2-ethyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
10 (cclxvi) 6-(2-cyclopropyl-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
(cclxvii) 5-(2-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxviii) 5-(3-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxix) 5-(4-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxx) 5-(2,5-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
15 (cclxxi) 5-(3,4-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxxii) 5-(3,5-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxxiii) 6-[2-(azetidin-1-yl)-6-(trifluoromethyl)pyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
(cclxxiv) 6-[2-methyl-6-(morpholin-4-yl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxxv) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-ethylphenyl)-1,2,4-triazin-3-amine;
20 (cclxxvi) 5-(2,5-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
(cclxxvii) 6-(2,6-dimethylpyridin-4-yl)-5-(4-methylphenyl)-1,2,4-triazin-3-amine;
(cclxxviii) 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
(cclxxix) 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
(cclxxx) 6-(3,5-dichlorophenyl)-5-(pyridin-2-yl)-1,2,4-triazin-3-amine;
25 (cclxxxi) 6-(3-chloro-5-methylphenyl)-5-(pyridin-2-yl)-1,2,4-triazin-3-amine;
(cclxxxii) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxxxiii) 6-[2,6-bis(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxxxiv) 6-[3-chloro-5-(trifluoromethyl)phenyl]-5-(pyridin-2-yl)-1,2,4-triazin-3-amine;
(cclxxxv) 6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
30 (cclxxxvi) 6-(3,5-dimethylphenyl)-5-(pyridin-2-yl)-1,2,4-triazin-3-amine;
(cclxxxvii) 6-[2-(dimethylamino)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxxxviii) 6-(2-bromo-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
(cclxxxix) 6-(2,6-dimethyl-1-oxidopyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
(ccxc) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-6-methylpyridine-2-carbonitrile;
35 (ccxci) 6-(3,5-dichlorophenyl)-5-(pyridin-3-yl)-1,2,4-triazin-3-amine;
(ccxcii) 6-(3-chloro-5-methylphenyl)-5-(pyridin-3-yl)-1,2,4-triazin-3-amine;
(ccxciii) 6-(3,5-dichlorophenyl)-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine;
(ccxciv) 6-[3-chloro-5-(trifluoromethyl)phenyl]-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine;
(ccxcv) 6-[2-bromo-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
40 (ccxcvi) 6-[3-chloro-5-(trifluoromethyl)phenyl]-5-(pyridin-3-yl)-1,2,4-triazin-3-amine;
(ccxcvii) 6-(3-chloro-5-methylphenyl)-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine;
(ccxcviii) N-[5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-methoxyphenyl]acetamide;
(ccxcix) N-[5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-hydroxyphenyl]acetamide;
(ccc) 6-(2-methyl-6-d3-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
45 (ccci) 1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-3,5-dimethylpyridin-4(1H)-one;
(cccii) 6-[2-(azetidin-1-yl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(ccccii) 6-[2-(azetidin-1-yl)-6-methylpyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine; and
(cccciv) 6-[2-(azetidin-1-yl)-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine.

50 **[0118]** Particular compounds that may be mentioned include compounds (iii), (v), (vi), (xiii), (xix) to (xxi), (xxiii) to (xxv), (xxvii) to (xxxi), (xxxiv), (xxxv), (xxxviii), (xxxix), (xli), (xlv), (xlvii), (xlviii) to (lv), (lvii) to (lxxxvii), (lxxxix) to (xci), (xciii), (xcvi) to (cxlii), (cxlv) to (cxlix), (cli), (clii), (clvi) to (clix) to (clxxiv), (clxxviii), (clxxix), (clxxxi), (clxxxiii), (clxxxiv), (clxxxvii), (cxcvii), (cxcviii), (cciii) to (ccv), (ccviii) to (ccxxxiii), (ccxxxv) to (ccxxxix), and (ccxli) to (ccciv) above.

55 **[0119]** Other particular compounds that may be mentioned include compounds (iii), (v), (vi), (xiii), (xix) to (xxi), (xxiii) to (xxv), (xxvii) to (xxxi), (xxxiv), (xxxv), (xxxviii), (xxxix), (xli), (xlv), (xlvii), (xlviii) to (lv), (lvii) to (lxxxvii), (lxxxix) to (xci), (xciii), (xcvi) to (cxlii), (cxlv) to (cxlix), (cli), (clii), (clvi) to (clix), (clxiii) to (clxxiv), (clxxviii), (clxxix), (clxxxi), (clxxxiii), (clxxxiv), (clxxxvii), (cxcvii), (cxcviii), (cciii) to (ccv), (ccviii) to (ccxxxiii), (ccxxxv) to (ccxxxix), and (ccxli) to (ccciv) above.

[0120] More particular compounds that may be mentioned include compounds (xxviii), (lix), (lxi), (lxiii), (lxix), (lxxvi),

(lxxxv), (lxxxvi), (xci), (xcvii), (xcviii), (xcix), (cii), (cviii), (cix), (cxii), (cxiv), (cxvi), (cxvii), (cxx), (cxi), (cxxviii), (cxxxiii), (cxli), (cxlii), (clxxxvii), (ccxvi), (ccxviii), (ccxxii), (ccxxiii), (ccxxvii), (ccxxx), (ccxxxvi), (ccxxxviii), (ccxxxix), (ccxlv), (ccxlix), (ccl), (cclii), (cclv), (cclvi), (cclvii), (cclx), (cclxii), (cclxiii), (cclxvi), (cclxvii), (cclxviii), (cclxix), (cclxxii), (cclxxxii), (cclxxxv), (cclxxxviii), (ccxcv), (ccxcix) and (cccii) above.

[0121] Still more particular compounds that may be mentioned include compounds (lxi), (cxiv), (ccl), (cclv) to (cclvii), (cclx), (cclxxxv), (cclxxxviii) and (ccxcix) above.

[0122] Other compounds that may be mentioned include:

- compounds (ii) to (ccxi) above (e.g. compounds (ii) to (lxvii) above); and
- compounds (lxxvi), (cix), (xcvii), (cxiv), (cxli), (ccxvii), (ccxviii), (ccxxii), (ccxxiii) and (ccxxv) above.

[0123] For the avoidance of doubt, references herein to compounds of formula I include, where the context permits, references to any of compounds of formula I, A1, la, lb or lc, lx, ly lz, lxa, lya, lza, lxb, lyb, lzb, lxb1, lyb1, lzb1, lyc, lxd, lyd or lzd (or, in certain examples, to compounds of formula I, la, lb or lc). Further, references to any of compounds of formula I, A1, la, lb or lc includes references to such compounds *per se*, to tautomers of such compounds, as well as to pharmaceutically acceptable salts or solvates, or pharmaceutically functional derivatives of such compounds.

[0124] Certain compounds described herein may be novel. Thus, we also disclose a compound of formula I (or A1, la, lb, lc, lx, ly lz, lxa, lya, lza, lxb, lyb, lzb, lxb1, lyb1, lzb1, lyc, lxd, lyd or lzd (or, in certain examples, of formula I, A1, la, lb or lc)), or a pharmaceutically acceptable salt or solvate, or a pharmaceutically functional derivative thereof as described hereinbefore, provided that the compound is not:

- (a) 5,6-Diphenyl-[1,2,4]triazin-3-ylamine;
- (b) 5-(2-chlorophenyl)-6-(3,4-dimethoxyphenyl)-[1,2,4]triazin-3-ylamine;
- (c) 5,6-di-*p*-tolyl-[1,2,4]triazin-3-ylamine;
- (d) 5-(4-dimethylaminophenyl)-6-phenyl-[1,2,4]triazin-3-ylamine;
- (e) 6-(4-dimethylaminophenyl)-5-(4-methoxyphenyl)-[1,2,4]triazin-3-ylamine;
- (f) 5-(2-chlorophenyl)-6-(3,4,5-trimethoxyphenyl)-[1,2,4]triazin-3-ylamine;
- (g) N*5*-(2,4-dichlorophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (h) N*5*-(4-chlorophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (i) N*5*-(4-bromophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (j) 6-phenyl-N*5*-*p*-tolyl-[1,2,4]triazine-3,5-diamine;
- (k) N*5*-(4-methoxyphenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (l) 2-[5,6-bis-(4-methoxyphenyl)-[1,2,4]triazin-3-ylamino]-ethanol;
- (m) 1-[5-(4-dimethylaminophenyl)-6-(4-methanesulfinylphenyl)-[1,2,4]triazin-3-ylamino]-butan-2-ol;
- (n) 2-[5-(4-dimethylaminophenyl)-6-(4-methoxyphenyl)-[1,2,4]triazin-3-ylamino]-ethanol;
- (o) 2-[6-(4-fluorophenyl)-5-(4-propoxyphenyl)-[1,2,4]triazin-3-ylamino]-ethanol;
- (p) 1-[5-(4-dimethylaminophenyl)-6-(4-methoxyphenyl)-[1,2,4]triazin-3-ylamino]-butan-2-ol;
- (q) 2-[5-(4-dimethylaminophenyl)-6-(4-methanesulfinylphenyl)-[1,2,4]triazin-3-ylamino]-ethanol;
- (r) 1-[6-(4-ethoxyphenyl)-5-(4-methanesulfinylphenyl)-[1,2,4]triazin-3-ylamino]-butan-2-ol;
- (s) 1-[5,6-bis-(4-methanesulfinylphenyl)-[1,2,4]triazin-3-ylamino]-propan-2-ol;
- (t) 1-[5,6-bis-(4-methanesulfinylphenyl)-[1,2,4]triazin-3-ylamino]-butan-2-ol;
- (u) 2-[5-(4-dimethylaminophenyl)-6-(4-fluorophenyl)-[1,2,4]triazin-3-ylamino]-ethanol;
- (v) 6-benzyl-5-piperidin-1-yl-[1,2,4]triazin-3-ylamine;
- (w) 6-benzyl-N*5*-phenyl-[1,2,4]triazine-3,5-diamine;
- (x) 5-benzyl-6-phenyl-[1,2,4]triazin-3-ylamine;
- (y) N*5*-(2,4-dichlorophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (z) 6-phenyl-N*5*-*o*-tolyl-[1,2,4]triazine-3,5-diamine;
- (aa) N*5*-(4-bromophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (bb) N*5*-(3-chloro-4-fluorophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (cc) N*5*-(2-bromophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (dd) N*5*-(2-chlorophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (ee) N*5*-(4-iodophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (ff) N*5*-(4-chlorophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (gg) N*5*-(4-fluorophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (hh) N*5*-(4-chlorophenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (ii) N*5*-(4-methoxyphenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (jj) N*5*-(4-methylphenyl)-6-phenyl-[1,2,4]triazine-3,5-diamine;
- (kk) 6,N*5*-diphenyl-[1,2,4]triazine-3,5-diamine;

(ll) (2S,3S,4S,5R,6R)-6-[3-amino-6-(2,3-dichlorophenyl)-[1,2,4]triazin-5-ylamino]-3,4,5-trihydroxytetrahydropyran-2-carboxylic acid;

(mm) (5,6-diphenyl-[1,2,4]triazin-3-yl)-methylamine;

(nn) (5,6-difuran-2-yl-[1,2,4]triazin-3-yl)-methylamine;

(oo) 5,6-bis-(4-methoxyphenyl)-[1,2,4]triazin-3-ylamine;

(pp) butyl-(5,6-diphenyl-[1,2,4]triazin-3-yl)-amine;

(qq) N⁴-(5,6-bis-(4-chlorophenyl)-[1,2,4]triazin-3-yl)-N¹,N¹-diethylpentane-1,4-diamine;

(rr) N'-(5,6-bis-(4-chlorophenyl)-[1,2,4]triazin-3-yl)-N,N-dibutylpropane-1,3-diamine;

(ss) N'-(5,6-bis-(4-chlorophenyl)-[1,2,4]triazin-3-yl)-N,N-diethylpropane-1,3-diamine;

(tt) 3-[5,6-bis-(4-chlorophenyl)-[1,2,4]triazin-3-ylamino]-propan-1-ol;

(uu) N,N-dibutyl-N'-(5,6-diphenyl-[1,2,4]triazin-3-yl)-propane-1,3-diamine;

(w) N'-(5,6-diphenyl-[1,2,4]triazin-3-yl)-N,N-diethylpropane-1,3-diamine; and

(ww) 3-(5,6-diphenyl-[1,2,4]triazin-3-ylamino)-propan-1-ol.

[0125] In other examples the compound may be a compound of formula I (or A1 or, particularly, Ia, Ib, Ic, Ix, Iy Iz, Ixa, Iya, Iza, Ixb, Iyb, Izb, Ixb1, Iyb1, Izb1, Iyc, Ixd, Iyd or Izd (or, in certain examples, of formula I, Ia, Ib or Ic)), or a pharmaceutically acceptable salt or solvate, or a pharmaceutically functional derivative thereof as described hereinbefore, provided that the compound is not:

(a) 2-(5,6-diphenyl-[1,2,4]triazin-3-ylamino)-ethan-1-ol;

(b) 3-amino-5,6-bis(2-chlorophenyl)-1,2,4-triazine; and

(c) 3-amino-5,6-bis(furan-2-yl)-1,2,4-triazine.

[0126] Similarly, other compounds of formula I may be novel. In this respect, other examples include compounds of formula I (or Ia, Ib, Ic, Ix, Iy Iz, Ixa, Iya, Iza, Ixb, Iyb, Izb, Ixb1, Iyb1, Izb1, Iyc, Ixd, Iyd or Izd (or, in certain examples, of formula I, Ia, Ib or Ic)) as described hereinbefore, wherein,

(i) when L¹ represents a bond or CH₂, L² represents a bond, CH₂ or NH, B represents unsubstituted phenyl and A represents phenyl, then A is substituted by one or more R^{4a} substituents;

(ii) when L¹ represents a bond, L² represents a bond or NH, B represents phenyl monosubstituted by CH₃, OCH₃, N(CH₃)₂ or Cl in the *para*-position, Cl in the *ortho*-position or disubstituted by Cl in the *ortho*- and *para*-position, and A represents phenyl, then A is substituted by one or more R^{4a} substituents provided that A is not monosubstituted by CH₃, OCH₃, N(CH₃)₂ or Cl in the *para*-position;

(iii) when L¹ represents a bond, L² represents a bond, R¹ represents -CH₂CH₂OH, -CH₂CH(OH)CH₃ or -CH₂CH(OH)CH₂CH₃, A represents phenyl substituted in the *para*-position with OR⁷, N(CH₃)₂, F or S(O)CH₃ and B represents phenyl, then B is not substituted in the *para* position of the phenyl ring by OR⁷, N(CH₃)₂, F or S(O)CH₃;

(iv) when L¹ represents CH₂, L² represents a bond, B represents unsubstituted piperidinyl linked to the rest of the molecule *via* the nitrogen atom of the piperidinyl group and A represents phenyl, then A is substituted by one or more R^{4a} substituents;

(v) when L¹ represents a bond, L² represents NH, B represents phenyl optionally substituted by one or more groups selected from halo, CH₃ and OCH₃ and A represents phenyl, then A is substituted by one or more R^{4a} substituents;

(vi) when L¹ represents a bond, L² represents NH and A represents 2,3-dichlorophenyl then B does not represent 3,4,5-trihydroxytetrahydropyran-2-carboxylic acid;

(vii) when L¹ represents a bond, L² represents a bond, B represents unsubstituted furanyl and A represents furanyl, then A is substituted by one or more R^{4a} substituents;

(viii) when A is a phenyl ring bearing substituents R^{4a} at both *meta*-positions and is unsubstituted at the *para*-position, relative to the point of attachment of A to the rest of the molecule, then B can be unsubstituted phenyl.

[0127] Still further compounds of formula I may be novel. In this respect, still further examples include compounds of formula I (or A1 or, particularly, Ia, Ib, Ic, Ix, Iy Iz, Ixa, Iya, Iza, Ixb, Iyb, Izb, Ixb1, Iyb1, Izb1, Iyc, Ixd, Iyd or Izd (or, in certain examples, of formula I, Ia, Ib or Ic)) as described hereinbefore, wherein when L¹ represents a bond or CH₂, L² represents a bond or NH, then at least one of A and B is not phenyl.

[0128] Still further compounds of formula I may be novel. Thus, according to a further example, there is provided a compound of formula I, which relate to compounds of formula I in which:

(1) R¹ represents H;

(2) L¹ represents CH₂, NR^{3a}, S(O)_p or, particularly, a direct bond, O, or C(O);

(3) L² represents CH₂, S(O)_p, or, particularly, a direct bond, O, or C(O);

(4) A represents a group selected from cyclopentyl, dihydrofuranyl (e.g. 2,3-dihydrofuranyl, 2,5-dihydrofuranyl), 4,5-dihydro-1H-maleimido, dioxanyl, furazanyl, hydantoinyl, imidazolyl, isoxazolyl, isoxazolidinyl, isothiazolyl, oxadiazolyl, oxazolyl, pyrazolyl, pyrrolinyl (e.g. 3-pyrrolinyl), pyrrolyl, pyrrolidinonyl, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetramethylenesulfoxide, tetrazolyl, thiadiazolyl, thiazolyl, thiazolidinyl, thienyl, triazolyl, particularly 2-azabicyclo[4.1.0]heptanyl, 1-azabicyclo-[2.2.2]octanyl, benzimidazolyl, benzisothiazolyl, benzisoxazolyl, benzodioxanyl, benzofuranyl, benzofurazanyl, benzo[c]isoxazolidinyl, benzomorpholinyl, 2,1,3-benzoxadiazolyl, benzoxazinyl (including 3,4-dihydro-2H-1,4-benzoxazinyl), benzoxazolidinyl, benzopyrazolyl, benzo[e]pyrimidine, 2,1,3-benzothiadiazolyl, benzothiazolyl, benzothienyl, benzotriazolyl, carbazolyl, chromanyl, chromenyl, cinnolinyl, (1Z,2Z,4Z,6Z,8Z)-cyclodecapentaenyl, cyclohexyl, cyclopentenyl, decahydroisoquinolenyl, 2,3-dihydrobenzimidazolyl, 1,3-dihydrobenzo-[c]furanyl, 1,3-dihydro-2,1-benzisoxazolyl, dihydropyranyl (e.g. 3,4-dihydropyranyl, 3,6-dihydropyranyl), 2,3-dihydropyrrolo[2,3-b]pyridinyl, dioxolanyl, hexahydropyrimidinyl, imidazo[2,3-b]thiazolyl, indanyl, indazolyl, indenyl, indolinyl, isobenzofuranyl, isochromanyl, isoindolinyl, isoindolyl, isothiochromanyl, ketopiperidinyl (e.g. 2-ketopiperidinyl, 3-ketopiperidinyl or 4-ketopiperidinyl), naphtho[1,2-b]furanyl, naphthyridinyl (including 1,6-naphthyridinyl or, particularly, 1,5-naphthyridinyl and 1,8-naphthyridinyl), 1,2- or 1,3-oxazinanyl, oxazolidinyl, phenazinyl, phenothiazinyl, phthalazinyl, piperazinyl, pteridinyl, purinyl, pyranyl, pyridazinyl, pyrrolo[2,3-b]pyridinyl, pyrrolo[5,1-b]pyridinyl, pyrrolo[2,3-c]pyridinyl, quinazolinyl, quinoliziny, quinoxalanyl, 4,5,6,7-tetrahydrobenzimidazolyl, 4,5,6,7-tetrahydrobenzopyrazolyl, 5,6,7,8-tetrahydrobenzo-[e]pyrimidine, tetrahydroisoquinolinyl (including 1,2,3,4-tetrahydroisoquinolinyl and 5,6,7,8-tetrahydroisoquinolinyl), tetrahydroquinolinyl (including 1,2,3,4-tetrahydroquinolinyl and 5,6,7,8-tetrahydroquinolinyl), tetrahydropyranyl, tetrahydropyridinyl (e.g. 3,4,5,6-tetrahydropyridinyl), 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, tetrahydrothiophenyl, thieno[5,1-c]pyridinyl, thiochromanyl, thiophenetyl, triazinanyl, 1,3,4-triazolo[2,3-b]pyrimidinyl, particularly, benzoxazolyl, benzodioxolyl, 2,3-dihydrobenzo[b]furanyl, cyclohexyl, furanyl, imidazo[1,2-a]pyridinyl, imidazo[1,5-a]pyridinyl, indolyl, isoquinolinyl, morpholinyl, naphthalenyl (e.g. 1-naphthalenyl, 2-naphthalenyl, 1,2,3,4-tetrahydronaphthyl), piperidinyl, pyrimidinyl, pyrrolidinyl pyrrolo[1,5-a]pyridinyl, pyrazinyl, pyridinonyl (such as 1-1H-pyridin-2-onyl, 3-1H-pyridin-2-onyl, 4-1H-pyridin-2-onyl, 6-1H-pyridin-2-onyl, or, particularly, 4-pyridinonyl), quinolinyl, more particularly, pyridinyl (e.g. 2-pyridinyl, 3-pyridinyl, 4-pyridinyl), which are optionally substituted by one or more R^{4a} or R^{4b} substituents, as appropriate, and phenyl substituted by one or more R^{4a} substituents;

(5) B represents piperidine or, particularly, phenyl substituted by one or more R^{4c} substituents;

(6) R^{4c} represents, independently at each occurrence,

Cl or, particularly, Br, F, I,
CN,

C₂₋₁₂ alkyl, C₂₋₁₂ alkenyl, C₂₋₁₂ alkynyl, which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ, aryl and Het¹,

Cy³, which Cy³ group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{6a}, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ, aryl and Het²,

Het^a, which Het^a group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-B⁶-R⁷ⁱ, aryl and Het³,

OR⁸,

meta- or *ortho*- methoxy relative to the point of attachment of B to the rest of the molecule;

S(O)_rR^{9a},

S(O)₂N(R^{9b})(R^{9c}),

N(R^{9d})S(O)₂R^{9e},

N(R^{9f})(R^{9g})

B⁷-C(G¹)-B⁸-R^{9h},

=O,

=S,

or when two R^{4c} groups are attached to the same carbon atom in a non-aromatic portion of a Cy¹, Het^A, Cy² or Het^B group, they may form, together with the carbon atom to which they are attached, a saturated or unsaturated 3 to 6-membered ring, which ring optionally contains one to three heteroatoms selected from O, S and N, and which ring is optionally substituted by one or more R⁹ⁱ substituents;

(7) R⁸ represents, independently at each occurrence,

H,

Cy³, Het^a, aryl^a, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, C₃₋₈ cycloalkyl, which latter seven groups are optionally substituted by one or more substituents selected from halo, -CN, C₃₋₆ cycloalkyl, aryl, Het⁴, -C(O)OR¹⁰, -C(O)R¹¹, -C(O)N(R^{N1})(R^{N2}), S(O)_pR^{9aa}, S(O)₂N(R^{9ba})(R^{9ca}), N(R^{9da})S(O)₂R^{9ea} and N(R^{9fa})(R^{9ga})

5 **[0129]** Further examples include those in which L¹ represents a direct bond, O, NH, S, SO₂ or C(O) and L² represents a direct bond (e.g. L¹ represents a direct bond or O, and L² represents a direct bond.)

[0130] Still further compounds of formula I may be novel. Thus, according to a further example, there is provided a compound of formula I, which relate to compounds of formula I in which:

- 10 (1) L¹ represents a direct bond, O, NR^{3a}, S(O)_p or C(O);
 (2) L² represents a direct bond, O, S(O)_p, NR^{3a}, CH₂ or C(O);
 (3) B represents a group, selected from 2-azabicyclo[4.1.0]heptanyl, 1-azabicyclo-[2.2.2]octanyl, benzimidazolyl, benzisothiazolyl, benzisoxazolyl, benzodioxanyl, benzodioxolyl, benzofurazanyl, benzo[c]isoxazolidinyl, 2,1,3-benzoxadiazolyl, benzoxazolidinyl, benzoxazolyl, benzopyrazolyl, 2,1,3-benzothiadiazolyl, benzothiazolyl, benzothienyl, benzotriazolyl, cyclopentyl, cyclohexyl, cyclopentenyl, cyclohexenyl, 2,3-dihydrobenzimidazolyl, dihydrofuranyl (e.g. 2,3-dihydrofuranyl, 2,5-dihydrofuranyl), 2,3-dihydrobenzo[b]furanyl, 1,3-dihydrobenzo-[c]furanyl, dihydropyranyl (e.g. 3,4-dihydropyranyl, 3,6-dihydropyranyl), 4,5-dihydro-1*H*-maleimido, 1,3-dihydro-2,1-benzisoxazolyl, 2,3-dihydropyrrolo[2,3-*b*]pyridinyl, dioxanyl, dioxolanyl, furazanyl, hexahydropyrimidinyl, hydantoinyl, imidazolyl, imidazo[1,2-*a*]pyridinyl, imidazo[2,3-*b*]thiazolyl, indanyl, indenyl, indolinyl, isobenzofuranyl, isoindolinyl, isoindolyl, isothiazolyl, isoxazolyl, isoxazolidinyl, ketopiperidinyl (e.g. 2-ketopiperidinyl or 4-ketopiperidinyl),
 15 morpholinyl, oxadiazolyl, 1,2- or 1,3-oxazinanyl, oxazolidinyl, oxazolyl, piperidinyl (e.g. piperidin-1-yl or, particularly, piperidin-2-yl, piperidin-3-yl, piperidin-4-yl, piperidin-5-yl or piperidin-6-yl), piperazinyl, phthalazinyl, pteridinyl, purinyl, pyranyl, pyridazinyl, pyrrolidinonyl, pyrrolinyl (e.g. 3-pyrrolinyl), pyrrolyl, pyrrolo[2,3-*b*]pyridinyl, pyrrolo[5,1-*b*]pyridinyl, pyrrolo[2,3-*c*]pyridinyl, sulfolanyl, 3-sulfolenyl, tetrahydrofuranyl, tetrahydropyranyl, 3,4,5,6-tetrahydropyridinyl, 1,2,3,4-tetrahydropyrimidinyl, 3,4,5,6-tetrahydropyrimidinyl, tetrahydrothiophenyl, 4,5,6,7-tetrahydrobenzimidazolyl, 4,5,6,7-tetrahydrobenzopyrazolyl, tetramethylenesulfoxide, tetrazolyl, thiazolidinyl, thiazolyl, thienyl, thieno[5,1-*c*]pyridinyl, thiophenethyl, triazinanyl, triazolyl, 1,3,4-triazolo[2,3-*b*]pyrimidinyl, more particularly, benzofuranyl, indazolyl, indolyl, pyrazinyl, pyrazolyl, pyridinyl (e.g. 2-pyridinyl, 3-pyridinyl, 4-pyridinyl), pyridinonyl, pyrimidinyl and pyrrolo[1,5-*a*]pyridinyl, wherein B is optionally substituted by one or more R^{4c} or R^{4d} substituents, as appropriate.
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[0131] We also disclose examples in which the compound of formula A1 or, particularly, I, Ia, Ib, Ic, Ix, Iy Iz, Ixa, Iya, Iza, Ixb, Iyb, Izb, Ixb1, Iyb1, Izb1, Iyc, Ixd, Iyd or Izd (or, in certain examples, of formula I, Ia, Ib or Ic) has definitions of A, B, L¹, L² and R¹ that are derived from any mutually compatible combination of any of the substituent definitions listed above in respect of compounds of formulae A1 or, particularly, I, Ia, Ib, Ic, Ix, Iy Iz, Ixa, Iya, Iza, Ixb, Iyb, Izb, Ixb1, Iyb1, Izb1, Iyc, Ixd, Iyd or Izd (or, in certain examples, of formula I, Ia, Ib or Ic).
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[0132] In accordance with the invention, compounds of formula Iyd may be administered alone (i.e. as a monotherapy, such as a monotherapy of a condition or disorder ameliorated by inhibition of the A₁ or, particularly, A_{2a} receptor). In alternative embodiments of the invention, however, compounds of formula Iyd may be administered in combination with another therapeutic agent (e.g. another therapeutic agent for the treatment of a condition or disorder ameliorated by inhibition of the A₁ or, particularly, A_{2a} receptor).
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[0133] Thus we also disclose the following.

(a) A compound of formula I (e.g. formula A1), as hereinbefore defined, and another therapeutic agent for use in the treatment of a condition or disorder ameliorated by the inhibition of the A₁ or, particularly, the A_{2a} receptor. In this example, the compound of formula I, as hereinbefore defined, may be administered sequentially, simultaneously or concomitantly with the other therapeutic agent.
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(b) A compound of formula I (e.g. formula A1), as hereinbefore defined, for use in the treatment of a condition or disorder ameliorated by the inhibition of the A₁ or, particularly, the A_{2a} receptor, wherein the compound of formula I is administered sequentially, simultaneously or concomitantly with another therapeutic agent.
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(c) Use of a compound of formula I (e.g. formula A1), as hereinbefore defined, and another therapeutic agent for the preparation of a medicament for the treatment of a condition or disorder ameliorated by the inhibition of the A₁ or, particularly, the A_{2a} receptor, wherein the compound of formula I is administered sequentially, simultaneously or concomitantly with the other therapeutic agent.
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(d) Use of a compound of formula I (e.g. formula A1), as hereinbefore defined, for the preparation of a medicament

for the treatment of a condition or disorder ameliorated by the inhibition of the A₁ receptor or, particularly, the A_{2a} receptor, wherein the medicament is administered in combination with another therapeutic agent.

(e) A method of treatment of a disorder or condition ameliorated by antagonising the A₁ receptor or, particularly, the A_{2a} receptor, which method comprises the administration of an effective amount of a compound of formula I (e.g. formula A1), as hereinbefore defined, and another therapeutic agent to a patient in need of such treatment.

(f) A combination product comprising

(A) a compound of formula I (e.g. formula A1), as hereinbefore defined, and
(B) another therapeutic agent,
wherein each of components (A) and (B) is formulated in admixture with a pharmaceutically-acceptable adjuvant, diluent or carrier.

(g) A combination product as defined at (f) above for use in the treatment of a condition or disorder ameliorated by the inhibition of the A₁ receptor or, particularly, the A_{2a} receptor.

(h) The use of a combination product as defined at (f) above for the manufacture of a medicament for the treatment of a condition or disorder ameliorated by the inhibition of the A₁ receptor or, particularly, the A_{2a} receptor.

(i) A method of treatment of a disorder or condition ameliorated by antagonising the A₁ receptor or, particularly, the A_{2a} receptor, which method comprises the administration of an effective amount of a combination product as defined at (f) above.

[0134] When used herein, the term "*another therapeutic agent*" includes references to one or more (e.g. one) therapeutic agents (e.g. one therapeutic agent) that are known to be useful for (e.g. that are known to be effective in) the treatment of: heart failure (such as acute decompensated heart failure and congestive heart failure); kidney failure (e.g. caused by heart failure); oedema; cancer (such as prostate, rectal, renal, ovarian, endometrial, thyroid, pancreatic, particularly breast, colon, bladder, brain, glioma, melanoma, pineal gland cancer and, more particularly, Lewis lung carcinoma; diabetes; diarrhea; macular degeneration (such as macular degeneration caused by angiogenesis (e.g. retinal angiogenesis); or particularly a disease of the central nervous system such as depression, a cognitive function disease, a neurodegenerative disease (such as Parkinson's disease, Huntington's disease, Alzheimer's disease, amyotrophic lateral sclerosis) and psychoses; an attention related disorder (such as attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD)); extra pyramidal syndrome (e.g. dystonia, akathisia, pseudoparkinsonism and tardive dyskinesia); a disorder of abnormal movement (such as restless leg syndrome (RLS) and periodic limb movement in sleep (PLMS)); cirrhosis; liver fibrosis; fatty liver; dermal fibrosis (e.g. in diseases such as scleroderma); a sleep disorder; stroke; and addictive behaviour. In particular embodiments of the invention that may be mentioned, the one or more other therapeutic agents do not exert their therapeutic effect by way of binding to an adenosine receptor (e.g. the A_{2a} receptor).

[0135] Particular other therapeutic agents that may be mentioned include, for example, levodopa (L-DOPA), dopamine agonists (e.g. pramipexole, ropinirole or rotigotine), monoamine oxidase B inhibitors (e.g. selegiline or rasagiline), catechol O-methyl transferase inhibitors (e.g. entacapone or tolcapone), amantadine, acetylcholinesterase inhibitors (e.g. donepezil, rivastigmine or galantamine) and glutamate inhibitors (e.g. memantine).

[0136] When used herein, the term "*administered sequentially, simultaneously or concomitantly*" includes references to:

administration of separate pharmaceutical formulations (one containing the compound of formula I and one or more others containing the one or more other therapeutic agents); and
administration of a single pharmaceutical formulation containing the compound of formula I and the other therapeutic agent(s).

[0137] The combination product described above provides for the administration of component (A) in conjunction with component (B), and may thus be presented either as separate formulations, wherein at least one of those formulations comprises component (A) and at least one comprises component (B), or may be presented (i.e. formulated) as a combined preparation (i.e. presented as a single formulation including component (A) and component (B)).

[0138] Thus, there is further provided:

(I) a pharmaceutical formulation including a compound of formula I (e.g. formula A1), as hereinbefore defined and another therapeutic agent, in admixture with a pharmaceutically-acceptable adjuvant, diluent or carrier (which formulation is hereinafter referred to as a "combined preparation"); and

(II) a kit of parts comprising components:

(i) a pharmaceutical formulation including a compound of formula I (e.g. formula A1), as hereinbefore defined, in admixture with a pharmaceutically-acceptable adjuvant, diluent or carrier; and

(ii) a pharmaceutical formulation including another therapeutic agent, in admixture with a pharmaceutically-acceptable adjuvant, diluent or carrier,

which components (i) and (ii) are each provided in a form that is suitable for administration in conjunction with the other.

[0139] Component (i) of the kit of parts is thus component (A) in admixture with a pharmaceutically-acceptable adjuvant, diluent or carrier. Similarly, component (ii) is component (B) in admixture with a pharmaceutically-acceptable adjuvant, diluent or carrier.

[0140] Compounds of formula I (e.g. formula A1) may be administered by any suitable route, but may particularly be administered orally, intravenously, intramuscularly, cutaneously, subcutaneously, transmucosally (e.g. sublingually or buccally), rectally, transdermally, nasally, pulmonarily (e.g. tracheally or bronchially), topically, by any other parenteral route, in the form of a pharmaceutical preparation comprising the compound in a pharmaceutically acceptable dosage form. Particular modes of administration that may be mentioned include oral, intravenous, cutaneous, subcutaneous, nasal, intramuscular or intraperitoneal administration

[0141] Compounds of formula I (e.g. formula A1) will generally be administered as a pharmaceutical formulation in admixture with a pharmaceutically acceptable adjuvant, diluent or carrier, which may be selected with due regard to the intended route of administration and standard pharmaceutical practice. Such pharmaceutically acceptable carriers may be chemically inert to the active compounds and may have no detrimental side effects or toxicity under the conditions of use. Suitable pharmaceutical formulations may be found in, for example, Remington The Science and Practice of Pharmacy, 19th ed., Mack Printing Company, Easton, Pennsylvania (1995). For parenteral administration, a parenterally acceptable aqueous solution may be employed, which is pyrogen free and has requisite pH, isotonicity, and stability. Suitable solutions will be well known to the skilled person, with numerous methods being described in the literature. A brief review of methods of drug delivery may also be found in e.g. Langer, Science (1990) 249, 1527.

[0142] Otherwise, the preparation of suitable formulations may be achieved routinely by the skilled person using routine techniques and/or in accordance with standard and/or accepted pharmaceutical practice.

[0143] The amount of compound of formula I (e.g. formula A1) in any pharmaceutical formulation used in accordance with the present invention will depend on various factors, such as the severity of the condition to be treated, the particular patient to be treated, as well as the compound(s) which is/are employed. In any event, the amount of compound of formula I in the formulation may be determined routinely by the skilled person.

[0144] For example, a solid oral composition such as a tablet or capsule may contain from 1 to 99 % (w/w) active ingredient; from 0 to 99% (w/w) diluent or filler; from 0 to 20% (w/w) of a disintegrant; from 0 to 5% (w/w) of a lubricant; from 0 to 5% (w/w) of a flow aid; from 0 to 50% (w/w) of a granulating agent or binder; from 0 to 5% (w/w) of an antioxidant; and from 0 to 5% (w/w) of a pigment. A controlled release tablet may in addition contain from 0 to 90 % (w/w) of a release-controlling polymer.

[0145] A parenteral formulation (such as a solution or suspension for injection or a solution for infusion) may contain from 1 to 50 % (w/w) active ingredient; and from 50% (w/w) to 99% (w/w) of a liquid or semisolid carrier or vehicle (e.g. a solvent such as water); and 0-20% (w/w) of one or more other excipients such as buffering agents, antioxidants, suspension stabilisers, tonicity adjusting agents and preservatives.

[0146] Depending on the disorder, and the patient, to be treated, as well as the route of administration, compounds of formula I (e.g. formula A1) may be administered at varying therapeutically effective doses to a patient in need thereof.

[0147] However, the dose administered to a mammal, particularly a human, in the context of the present invention should be sufficient to effect a therapeutic response in the mammal over a reasonable timeframe. One skilled in the art will recognize that the selection of the exact dose and composition and the most appropriate delivery regimen will also be influenced by *inter alia* the pharmacological properties of the formulation, the nature and severity of the condition being treated, and the physical condition and mental acuity of the recipient, as well as the potency of the specific compound, the age, condition, body weight, sex and response of the patient to be treated, and the stage/severity of the disease.

[0148] Administration may be continuous or intermittent (e.g. by bolus injection). The dosage may also be determined by the timing and frequency of administration. In the case of oral or parenteral administration the dosage can vary from about 0.01 mg to about 1000 mg per day of a compound of formula I (e.g. formula A1).

[0149] In any event, the medical practitioner, or other skilled person, will be able to determine routinely the actual dosage, which will be most suitable for an individual patient. The above-mentioned dosages are exemplary of the average case; there can, of course, be individual instances where higher or lower dosage ranges are merited, and such are within the scope of this invention.

[0150] As mentioned above, compounds of formula A1 or, particularly, Ix, Iy, Iz, Ixa, Iya, Iza, Ixb, Iyb, Izb, Ixb1, Iyb1, Izb1, Iyc, Ixd, Iyd or Izd (or, particularly, formula I, Ia, Ib or Ic) may bind selectively to A₁ or, particularly, A_{2a} receptors, and may therefore have utility as diagnostic agents for determining the presence and/or location (either *in vivo* or *in vitro*) of adenosine A₁ or, particularly, A_{2a} receptors.

[0151] Thus, we disclose a method (e.g. an *in vivo* or, particularly, an *ex vivo* method) of determining the presence and/or location of adenosine A_{2a} receptors in a tissue sample, said method comprising contacting the tissue sample with a compound of formula A1 or, particularly, Ix, Iy, Iz, Ixa, Iya, Iza, Ixb, Iyb, Izb, Ixb1, Iyb1, Izb1, Iyc, Ixd, Iyd or Izd (or, particularly, formula I, Ia, Ib or Ic) and then detecting by a visualising method the location of the compound of formula I in the sample.

[0152] Visualising methods that may be mentioned include spectroscopic detection methods (e.g. fluorescence detection, magnetic resonance imaging, etc.) or, when the compound of formula I is isotopically labelled or enriched with a radioisotope (such as ³H, ¹¹C, ³⁵S, ¹⁸F, or ¹²⁵I), radioactivity detection methods (e.g. alpha-, beta- or gamma-detection by standard autoradiography, phosphor or scintillation methods known to those skilled in the art, or positron emission tomography (which latter method may be employed, for example, when the compound of formula I is isotopically labelled or enriched with ¹¹C, or, particularly, ¹⁸F)).

[0153] The examples and disclosures described herein (e.g. the above-mentioned compounds, combinations, methods and uses) may have the advantage that, in the treatment of the conditions described herein, they may be more convenient for the physician and/or patient than, be more efficacious than, be less toxic than, have better selectivity over, have a broader range of activity than, be more potent than, produce fewer side effects than, or may have other useful pharmacological properties over, similar compounds, combinations, methods (treatments) or uses known in the prior art for use in the treatment of those conditions or otherwise.

[0154] Side effects that may be mentioned in this respect include side effects caused by A₃ receptor antagonism (such as an increased propensity for tissue damage following ischaemia (e.g. in the CNS, heart, kidney, lung and eye), increased reperfusion injury, increased neurodegeneration in response to hypoxia, potentially deleterious effects on motor function or pain thresholds, immunosuppression or immunostimulation).

[0155] Compounds of formula I may be known and/or may be commercially available. Other compounds of formula I (e.g. that are not commercially available) may be prepared in accordance with techniques that are well known to those skilled in the art, for example as described hereinafter.

[0156] According to a further aspect of the invention there is provided a process for the preparation of a compound of formula Iyd as defined in Claim 21. We also disclose a process for the preparation of a compound of formula I which process comprises:

(ia) for compounds of formula I in which R¹ represents CH₂-R^{1a}, wherein R^{1a} represents a C₁₋₅ alkyl optionally substituted by one or more halo atoms, reaction of a compound of formula I in which R¹ represents H, with a compound of formula IIa,



wherein R^{1a} represents H or a C₁₋₅ alkyl which may be optionally substituted by one or more halo atoms, followed by reduction of the resulting imine by a suitable reducing agent (e.g. LiBH₄, NaBH₄, NaBH(OAc)₃, LiAlH₄), under reaction conditions well known to those skilled in the art, for example under such conditions that the two steps may be performed with or without the separation or purification of the reaction mixture;

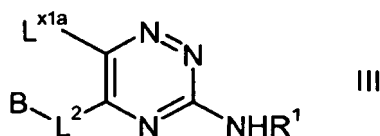
(ib) for compounds of formula I in which R¹ represents C₁₋₆ alkyl optionally substituted by one or more of halo OR^{2a} or NR^{2b}R^{2c}, reaction of a compound of formula I in which R¹ represents H, with a compound of formula IIb,



wherein L^{axx} represents a suitable leaving group (such as chloro, bromo, or preferably iodo) and R^{1x} represents C₁₋₆ alkyl optionally substituted by one or more of halo OR^{2a} or NR^{2b}R^{2c}, under reaction conditions known to those skilled in the art, for example in the presence of an appropriate base (such as Hunig's base, triethylamine, pyridine), in a suitable solvent (e.g. pyridine, triethylamine, dichloromethane, tetrahydrofuran) and at a suitable temperature (e.g. from room temperature to about 180°C);

(ii) for compounds of formula I in which L¹ represents a direct bond,

(a) reaction of a compound of formula III,

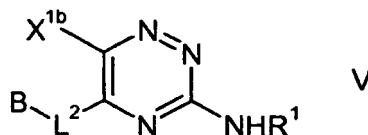


wherein L^{x1a} represents a metal halide (for example a zinc halide (e.g. -ZnCl) or a magnesium halide (e.g. -MgBr)), -Sn(R^{x1})₃, an organoboronic acid (e.g. an alkyl-cyclotriboroxane derivative or, particularly, -B(OH)₂ or -B(OR^{x1})₂), or an organosilane (e.g. -Si(OEt)₃), wherein each R^{x1} mentioned herein independently represents a C₁₋₆ alkyl group, or, in the case of -B(OR^{x1})₂, the two R^{x1} groups may be linked together to form a 4- to 6-membered cyclic group (such as a 4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl group), and L^2 , B, and R^1 are as defined hereinbefore, with a compound of formula IV,



wherein X^{1a} represents a suitable leaving group (such as chloro, bromo, or preferably iodo), and A is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example in the presence of an appropriate metal catalyst (or a salt or complex thereof, such as Cu, Cu(OAc)₂, CuI (or CuI/diamine complex), copper tris(triphenyl-phosphine)bromide, Pd(OAc)₂, Pd₂(dba)₃ or NiCl₂) and an optional additive (such as Ph₃P, 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl, xantphos, NaI or an appropriate crown ether such as 18-crown-6-benzene), in the presence of an appropriate base (such as NaH, Et₃N, pyridine, *N,N'*-dimethylethylenediamine, triethanolamine, *N*-methyldiethanolamine, *N,N*-diisopropylethanolamine, triisopropanolamine, Na₂CO₃, K₂CO₃, K₃PO₄, CS₂CO₃, *t*-BuONa or *t*-BuOK or a mixture thereof, optionally in the presence of 4A molecular sieves), in a suitable solvent (e.g. dichloromethane, dioxane, toluene, ethanol, isopropanol, dimethylformamide, ethylene glycol, ethylene glycol dimethyl ether, water, dimethylsulfoxide, acetonitrile, propionitrile, dimethylacetamide, *N*-methylpyrrolidinone, tetrahydrofuran, diethyl ether or a mixture thereof) and at a suitable temperature (e.g. from room temperature to about 180°C);

(b) reaction of a compound of formula V,



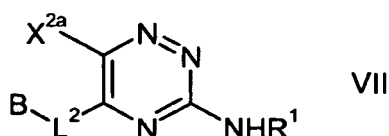
wherein X^{1b} represents a suitable leaving group (such as chloro, bromo, or preferably iodo), and L^2 , B, and R^1 are as defined hereinbefore, with a compound of formula VI,



wherein L^{x1b} represents a metal halide (for example a zinc halide (e.g. -ZnCl) or a magnesium halide (e.g. -MgBr)), -Sn(R^{x1})₃, an organoboronic acid (e.g. an alkyl-cyclotriboroxane derivative or, particularly, -B(OH)₂ or -B(OR^{x1})₂), or an organosilane (e.g. -Si(OEt)₃), wherein each R^{x1} is as defined above, and A is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (ii)(a) above;

(iii) for compounds of formula I in which L^1 represents -NR^{3a}-,

(a) reaction of a compound of formula VII,

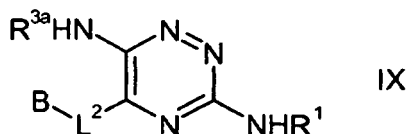


wherein X^{2a} represents a suitable leaving group (such as chloro, bromo, iodo or a sulfonate group (e.g. $-\text{OS}(\text{O})_2\text{CF}_3$, $-\text{OS}(\text{O})_2\text{CH}_3$ or $-\text{OS}(\text{O})_2\text{PhMe}$)), and L^2 , B, and R^1 are as defined hereinbefore with a compound of formula VIII,



wherein A and R^{3a} are as defined hereinbefore, under reaction conditions known to those skilled in the art, for example in the presence of an appropriate base (such as NaH, Et_3N , pyridine, N,N' -dimethylethylenediamine, Na_2CO_3 , K_2CO_3 , K_3PO_4 , CS_2CO_3 , $t\text{-BuONa}$ or $t\text{-BuOK}$ or a mixture thereof, optionally in the presence of 4A molecular sieves), optionally in the presence of a suitable solvent (e.g. dichloromethane, dioxane, toluene, ethanol, isopropanol, dimethylformamide, ethylene glycol, ethylene glycol dimethyl ether, water, dimethylsulfoxide, acetonitrile, dimethylacetamide, N -methylpyrrolidinone, tetrahydrofuran or a mixture thereof) and at a suitable temperature (e.g. from room temperature to about 180°C);

(b) reaction of a compound of formula IX,



wherein R^{3a} , L^2 , B, and R^1 are as defined hereinbefore, with a compound of formula X,



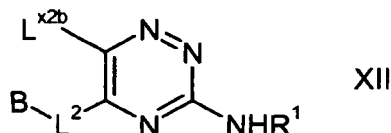
wherein X^{2b} represents a suitable leaving group (such as chloro, bromo, iodo or a sulfonate group (e.g. $-\text{OS}(\text{O})_2\text{CF}_3$, $-\text{OS}(\text{O})_2\text{CH}_3$ or $-\text{OS}(\text{O})_2\text{PhMe}$)), and A represents Cy^1 or Het^A , as defined hereinbefore, except that the Cy^1 or Het^A group contains a fully saturated carbon atom that is attached to X^{2b} , under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iii)(a) above;

(c) reaction of a compound of formula IX as defined above, with a compound of formula XI,



wherein L^{x2a} represents a suitable leaving group (such as chloro, bromo, iodo or a sulfonate group (e.g. $-\text{OS}(\text{O})_2\text{CF}_3$, $-\text{OS}(\text{O})_2\text{CH}_3$ or $-\text{OS}(\text{O})_2\text{PhMe}$), $-\text{B}(\text{OH})_2$ or $-\text{B}(\text{OR}^{x1})_2$, in which each R^{x1} is as defined above, and A represents Cy^1 or Het^A , as defined hereinbefore, except that Cy^1 or Het^A contains an aromatic ring that is attached to L^{x2a} via a carbon atom, under reaction conditions known to those skilled in the art, for example in the presence of an appropriate metal catalyst (or a salt or complex thereof, such as Cu, $\text{Cu}(\text{OAc})_2$, CuI (or CuI/diamine complex), copper tris(triphenyl-phosphine)bromide), in a suitable solvent (e.g. dichloromethane, dioxane, toluene, ethanol, isopropanol, dimethylformamide, ethylene glycol, ethylene glycol dimethyl ether, water, dimethylsulfoxide, acetonitrile, dimethylacetamide, N -methylpyrrolidinone, tetrahydrofuran or a mixture thereof), and at a suitable temperature (e.g. from room temperature to about 180°C), e.g. as described in Quach et al. Org. Lett., 2003, 5, 4397-4400 or Wolfe et al. 2004. Org. Synth.; Coll. Vol. 10: 423;

(d) reaction of a compound of formula XII,



wherein L^{x2b} represents a suitable leaving group (such as chloro, bromo, iodo or a sulfonate group (e.g. $-\text{OS}(\text{O})_2\text{CF}_3$, $-\text{OS}(\text{O})_2\text{CH}_3$ or $-\text{OS}(\text{O})_2\text{PhMe}$), $-\text{B}(\text{OH})_2$ or $-\text{B}(\text{OR}^{x1})_2$ in which each R^{x1} is as defined above, and L^2 , B, and R^1 are as defined hereinbefore, with a compound of formula VIII as defined above, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iii)(c) above;

(iv) for compounds of formula I in which L^1 represents $-\text{O}-$ or $-\text{S}-$,

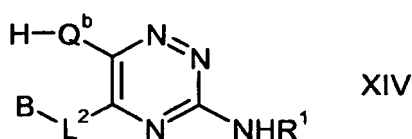
(a) reaction of a compound of formula VII as defined above, with a compound of formula XIII,

A-Q^a-H

XIII

wherein Q^a is O or S, and A is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example the reaction may be performed at a suitable temperature (e.g. from room temperature to about 180°C), in the presence of a suitable base (e.g. caesium carbonate, sodium hydride, sodium bicarbonate, potassium carbonate, pyrrolidinopyridine, pyridine, triethylamine, tributylamine, trimethylamine, dimethylaminopyridine, diisopropylamine, diisopropylethylamine, 1,8-diazabicyclo[5.4.0]undec-7-ene, sodium hydroxide, *N*-ethyldiisopropylamine, *N*-(methylpolystyrene)-4-(methylamino)pyridine, potassium bis(trimethylsilyl)amide, sodium bis(trimethylsilyl)amide, potassium *tert*-butoxide, lithium diisopropylamide, lithium 2,2,6,6-tetramethylpiperidine or mixtures thereof), or alternatively in the presence of a suitable coupling agent (such as a dialkylazodicarboxylate (e.g. diethylazodicarboxylate) together with a trialkyl or triaryl phosphine (e.g. PPh₃)), and an appropriate solvent (e.g. dimethylsulfoxide, tetrahydrofuran, pyridine, toluene, dichloromethane, chloroform, acetonitrile, dimethylformamide, trifluoromethylbenzene, dioxane or triethylamine);

(b) reaction of a compound of formula XIV,



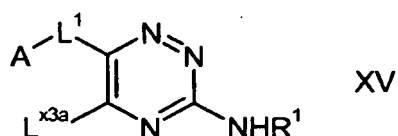
wherein Q^b is O or S, and L², B and R¹ are as defined hereinbefore, with a compound of formula X as defined above, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iv)(a) above;

(v) for compounds of formula I in which L¹ represents -O- and A represents Cy¹ or Het^A as defined hereinbefore, except that the Cy¹ or Het^A group is directly attached to the rest of the molecule *via* a fully saturated carbon atom, reaction of a compound of formula XIII, wherein Q^a is O and A is as defined hereinbefore, with a compound of formula XIV wherein Q^b is O and L², B and R¹ are as defined hereinbefore, under reaction conditions known to those skilled in the art, for example the reaction may be performed at a suitable temperature (e.g. from room temperature to about 180°C), in the presence of a suitable coupling agent (such as a dialkylazodicarboxylate (e.g. diethylazodicarboxylate) together with a trialkyl or triaryl phosphine (e.g. PPh₃)), and an appropriate solvent (e.g. tetrahydrofuran, dimethylsulfoxide, pyridine, toluene, dichloromethane, chloroform, acetonitrile, dimethylformamide, trifluoromethylbenzene, dioxane or triethylamine);

(vi) for compounds of formula I in which L¹ represents -S(O)- or -S(O)₂-, oxidation of a compound of formula I in which L¹ represents -S-, in the presence of a suitable oxidising agent, (for example *meta*-chloroperoxybenzoic acid, KMnO₄, *t*-butylammoniumperiodate and/or potassium peroxymonosulfate (e.g. Oxone®)). In order to provide selective oxidation to provide either compounds of formula I in which L¹ represents -S(O)- or -S(O)₂-, the skilled person will appreciate that the length of time (and the number of equivalents of the oxidising agent) or the use of certain oxidising agents may provide for better selectivity. For example, for the formation of compounds of formula I in which L¹ represents -S(O)-, the oxidising agent of choice is preferably *t*-butylammoniumperiodate (and preferably one equivalent, or a slight excess, is employed). Such a reaction may be performed in the presence of a suitable solvent such as dichloromethane, and optionally in the presence of a catalyst such as 5,10,15,20-tetraphenyl-21*H*,23*H*-porphine iron(III)chloride, under an inert atmosphere. For the formation of compounds of formula I in which L¹ represents -S(O)₂-, the oxidising agent is preferably potassium peroxymonosulfate (e.g. Oxone®), which reaction may be performed in the presence of a suitable solvent such as tetrahydrofuran;

(vii) for compounds of formula I in which L² represents a direct bond,

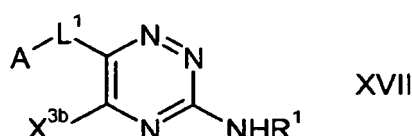
(a) reaction of a compound of formula XV,



wherein L^{3a} represents a metal halide (for example a zinc halide (e.g. $-ZnCl$) or a magnesium halide (e.g. $-MgBr$)), $-Sn(R^{x1})_3$, an organoboronic acid (e.g. an alkyl-cyclotriboroxane derivative or, particularly, $-B(OH)_2$ or $-B(OR^{x1})_2$), or an organosilane (e.g. $-Si(EtO)_3$), in which each R^{x1} is as defined above, and L^1 , A, and R^1 are as defined hereinbefore, with a compound of formula XVI,



wherein X^{3a} represents a suitable leaving group such as chloro, bromo, or preferably iodo, and B is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (ii)(a) above;
(b) reaction of a compound of formula XVII,



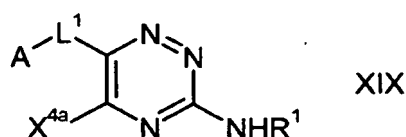
wherein X^{3b} represents a suitable leaving group such as chloro, bromo, or preferably iodo, and L^1 , A, and R^1 are as defined hereinbefore, with a compound of formula XVIII,



wherein L^{3b} represents a metal halide (for example a zinc halide (e.g. $-ZnCl$), or a magnesium halide (e.g. $-MgBr$)); $-Sn(R^{x1})_3$, an organoboronic acid (e.g. an alkyl-cyclotriboroxane derivative or, particularly, $-B(OH)_2$ or $-B(OR^{x1})_2$), or an organosilane (e.g. $-Si(EtO)_3$), in which each R^{x1} is as defined above, and B is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (ii)(a) above;

(viii) for compounds of formula I in which L^2 represents $-NR^{3a}$,

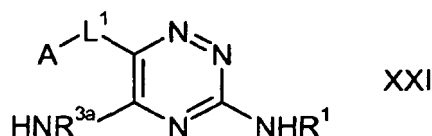
(a) reaction of a compound of formula XIX,



wherein X^{4a} represents a suitable leaving group (such as chloro, bromo, iodo or a sulfonate group (e.g. $-OS(O)_2CF_3$, $-OS(O)_2CH_3$ or $-OS(O)_2PhMe$)), and L^1 , A, and R^1 are as defined hereinbefore, with a compound of formula XX,



wherein B and R^{3a} are as defined hereinbefore, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iii)(a) above;
(b) reaction of a compound of formula XXI,



wherein R^{3a}, L¹, A, and R¹ are as defined hereinbefore, with a compound of formula XXII,



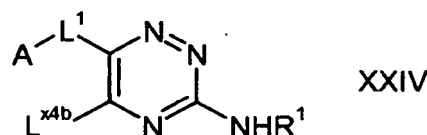
wherein X^{4b} represents a suitable leaving group (such as chloro, bromo, iodo or a sulfonate group (e.g. -OS(O)₂CF₃, -OS(O)₂CH₃ or -OS(O)₂PhMe)), and B represents Cy² or Het^B, as defined hereinbefore, except that the Cy² or Het^B group contains a fully saturated carbon atom that is attached to X^{4b}, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iii)(a) above;

(c) reaction of a compound of formula XXI as defined above, with a compound of formula XXIII,



wherein L^{x4a} represents a suitable leaving group, -B(OH)₂ or -B(OR^{x1})₂ in which each R^{x1} is as defined above, and B is as defined hereinbefore, except that Cy² or Het^B contains an aromatic ring that is attached to L^{x4a} via a carbon atom, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iii)(c) above;

(d) reaction of a compound of formula XXIV,



wherein L^{x4b} represents -B(OH)₂ or -B(OR^{x1})₂ in which each R^{x1} is as defined above, and L¹, A, and R¹ are as defined hereinbefore, with a compound of formula XX as defined above, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iii)(c) above;

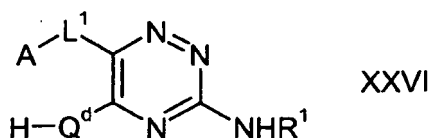
(ix) for compounds of formula I in which L² represents -O- or -S-,

(a) reaction of a compound of formula XIX as defined above, with a compound of formula XXV,



wherein Q^c represents O or S, and B is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iv)(a) above;

(b) reaction of a compound of formula XXVI,



wherein Q^d represents O or S, and L¹, A and R¹ are as defined hereinbefore, with a compound of formula XXII as defined above, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iv)(a) above;

(x) for compounds of formula I in which L² represents -O- and B represents Cy² or Het^B as defined hereinbefore, except that the Cy² or Het^B group is directly attached to the rest of the molecule via a fully saturated carbon atom, reaction of a compound of formula XXV, wherein Q^c is O and B is as defined hereinbefore, with a compound of formula XXVI wherein Q^d is O and L¹, A and R¹ are as defined hereinbefore, under reaction conditions known to

those skilled in the art, for example the reaction may be performed at a suitable temperature (e.g. from room temperature to about 180°C), in the presence of a suitable coupling agent (such as a dialkylazodicarboxylate (e.g. diethylazodicarboxylate) together with a trialkyl or triaryl phosphine (e.g. PPh₃)), and an appropriate solvent (e.g. tetrahydrofuran, dimethylsulfoxide, pyridine, toluene, dichloromethane, chloroform, acetonitrile, dimethylformamide, trifluoromethylbenzene, dioxane or triethylamine);

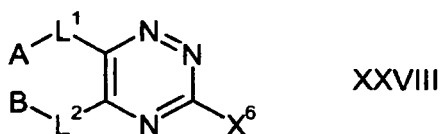
(xi) for compounds of formula I in which L² represents -S(O)- or -S(O)₂-, oxidation of a compound of formula I in which L² represents -S- wherein A, L¹, B, and R¹ are as defined hereinbefore, in the presence of a suitable oxidising agent, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (vi) above;

(xii) for compounds of formula I in which L¹ and/or L² represents N(R^{3x}), wherein R^{3x} takes the same definition as R^{3a} above, except that R^{3x} does not represent H, reaction of a corresponding compound of formula I in which L¹ and/or L² is NH, with a compound of formula XXVII,



wherein X^{5a} represents a suitable leaving group such as one defined hereinbefore in respect of X^{2a} or -Sn(R^{x1})₃ in which R^{3x} and each R^{x1} are as defined above, under reaction conditions known to those skilled in the art, for example in the case where X^{5a} represents a leaving group (such as iodo, bromo, chloro or a sulfonate group), the reaction may be performed at a suitable temperature (e.g. from room temperature to about 180°C), optionally in the presence of a suitable base (e.g. sodium hydride, sodium bicarbonate, potassium carbonate, pyrrolidinopyridine, pyridine, triethylamine, tributylamine, trimethylamine, dimethylaminopyridine, diisopropylamine, diisopropylethylamine, 1,8-diazabicyclo[5.4.0]undec-7-ene, sodium hydroxide, N-ethyl-diisopropylamine, N-(methylpolystyrene)-4-(methylamino)pyridine, potassium bis(trimethylsilyl)amide, sodium bis(trimethylsilyl)amide, potassium tert-butoxide, lithium diisopropylamide, lithium 2,2,6,6-tetramethylpiperidine or mixtures thereof) and an appropriate solvent (e.g. tetrahydrofuran, pyridine, toluene, dichloromethane, chloroform, acetonitrile, dimethylformamide, trifluoromethylbenzene, dioxane or triethylamine). In the case when X^{5a} represents -B(OH)₂ or -Sn(alkyl)₃, the reaction may be performed in the presence of a suitable catalyst system, (e.g. a metal (or a salt or complex thereof) such as CuI (or CuI/diamine complex), Cu, Cu(OAc)₂, copper tris(triphenylphosphine)bromide, Pd/C, PdCl₂, Pd(OAc)₂, Pd(Ph₃P)₂Cl₂, Pd(Ph₃P)₄, Pd₂(dba)₃ or NiCl₂ and a ligand such as *t*-Bu₃P, (C₆H₁₁)₃P, Ph₃P, AsPh₃, P(*o*-Tol)₃, 1,2-bis(diphenylphosphino) ethane, 2,2'-bis(di-*tert*-butylphosphino)-1,1'-bi-phenyl, 2,2'-bis(diphenylphosphino)-1,1'-bi-naphthyl, 1,1'-bis(diphenylphosphino)ferrocene, 1,3-bis(diphenylphosphino)-propane, xantphos, or a mixture thereof), together with a suitable base (such as, Na₂CO₃, K₃PO₄, Cs₂CO₃, NaOH, KOH, K₂CO₃, CsF, Et₃N, (i-Pr)₂NEt, *t*-BuONa or *t*-BuOK, NaH, Et₃N, pyridine, N,N'-dimethylethylenediamine, (or mixtures thereof, optionally in the presence of 4A molecular sieves)) in a suitable solvent (such as dioxane, toluene, ethanol, isopropanol, ethylene glycol, dimethylformamide, ethylene glycol dimethyl ether, water, dimethylsulfoxide, acetonitrile, dimethylacetamide, N-methylpyrrolidinone, tetrahydrofuran or mixtures thereof);

(xiii) reaction of a compound of formula XXVIII,

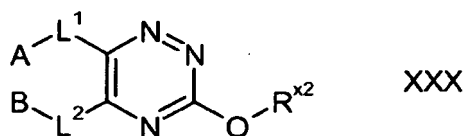


wherein X⁶ represents a suitable leaving group (such as chloro, bromo, iodo, a sulfonate group (e.g. -OS(O)₂CF₃, -OS(O)₂CH₃ or -OS(O)₂PhMe), a sulfone group (e.g. -S(O)₂CH₃, -S(O)₂CF₃ or -S(O)₂-PhMe) or -OR^{4x}, wherein R^{4x} represents an aryl or heteroaryl group), and A, B, L¹ and L² are as defined hereinbefore, with a compound of formula XXIX,



wherein R¹ is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iii)(a) above;

(xiv) for compounds of formula I, reaction of a compound of formula XXX,

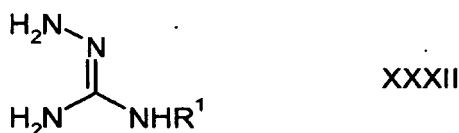


wherein R^{x2} represents a suitable leaving group (e.g. a tosyl, mesylate group or an electron deficient aryl or heteroaryl group (such as pentafluorophenyl)) and A, B, L^1 and L^2 are as defined hereinbefore, or a protected derivative thereof, with a compound of formula XXIX, wherein R^1 is as defined hereinbefore, under conditions known to those skilled in the art, for example the reaction may be performed at around room temperature or above (e.g. up to 40-180°C), in a suitable solvent such as dioxane, ethanol, isopropanol, dimethylformamide, acetonitrile, tetrahydrofuran or mixtures thereof;

(xv) for compounds of formula I in which both L^1 and L^2 represent direct bonds, reaction of a compound of formula XXXI,



wherein A and B are as defined hereinbefore, with a compound of formula XXXII,



wherein R^1 is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example as described in WO 92/02513;

(xvi) for compounds of formula I in which L^1 represents a direct bond and A represents a nitrogen-containing Het^A group that is attached *via* a nitrogen atom within the ring system, reaction of a compound of formula VII as defined above, with a compound of formula XXXIII,



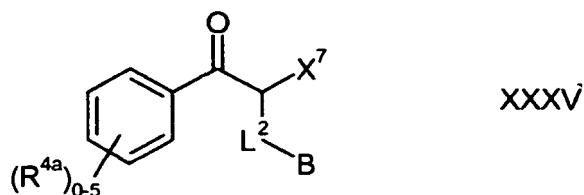
wherein Het^{A1} takes the same definition as Het^A as defined above, except that Het^{A1} is a nitrogen-containing heterocycle that is attached to the H-atom depicted for the compound of formula XXXIII *via* a nitrogen atom in the heterocycle, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iii)(a) above;

(xvii) for compounds of formula I in which L^2 represents a direct bond and B represents a nitrogen-containing Het^B group that is attached *via* a nitrogen atom within the ring system, reaction of a compound of formula XIX as defined above, with a compound of formula XXXIV,

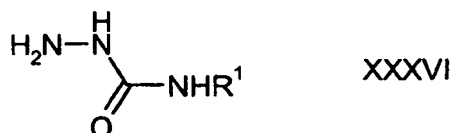


wherein Het^{B2} takes the same definition as Het^B as defined above, except that Het^{B2} is a nitrogen-containing heterocycle that is attached to the H-atom depicted for the compound of formula XXXIV *via* a nitrogen atom in the heterocycle, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (iii)(a) above;

(xviii) for compounds of formula I in which L^1 represents a direct bond and A represents a phenyl group optionally substituted by one or more R^{4a} groups, reaction of a compound of formula XXXV,



wherein X^7 represents a suitable leaving group (such as chloro, bromo, iodo, a sulfonate group (e.g. $-\text{OS}(\text{O})_2\text{CF}_3$, $-\text{OS}(\text{O})_2\text{CH}_3$ or $-\text{OS}(\text{O})_2\text{PhMe}$), and L^2 , B and R^{4a} are as defined hereinbefore, with a compound of formula XXXVI,



wherein R^1 is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example as described in WO 00/66568;

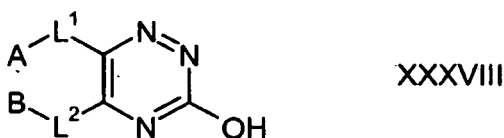
(xix) for compounds of formula I in which L^1 represents $-\text{CH}=\text{CH}-$, reaction of a compound of formula V as defined above, with a compound of formula XXXVII,



wherein L^{x5a} represents a metal halide (for example a zinc halide (e.g. $-\text{ZnCl}$) or a magnesium halide (e.g. $-\text{MgBr}$)), $-\text{Sn}(\text{R}^{x1})_3$, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$, or an organosilane (e.g. $-\text{Si}(\text{OEt})_3$), wherein each R^{x1} is as defined above, and A is as defined hereinbefore, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (ii)(a) above; and

(xx) for compounds of formula I in which one of R^{4a} to R^{4d} represents $-\text{OH}$, reaction of a compound of formula I in which one of R^{4a} to R^{4d} represents $-\text{OR}^{4y}$, wherein R^{4y} represents a C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, which groups are optionally substituted by one or more substituents selected from halo, C_{1-4} alkyl and aryl, with an appropriate dealkylating agent (such as boron tribromide, 2-(diethylamino)ethanethiol or a hydrogen halide (e.g. HBr)), under reaction conditions known to those skilled in the art, for example in a suitable solvent (e.g. dichloromethane, dimethylformamide, dioxane, toluene, ethanol, isopropanol, dimethylsulfoxide, acetonitrile, dimethylacetamide, tetrahydrofuran or a mixture thereof, or an ionic liquid (e.g. $[\text{bmim}][\text{BF}_4]$)), and at a suitable temperature (e.g. from room temperature to about 180°C), e.g. as described in I. Ryu et al., J. Am. Chem. Soc., 2002, 124, 12946-12947; J. Magano et al., J. Org. Chem., 2006, 71, 7103-7105; or S. K. Boovanahalli et al., J. Org. Chem., 2004, 69, 3340-3344.

[0157] Compounds of formula XXVIII wherein X^6 represents OR^{4x} , may be prepared by reaction of a compound of formula XXXVIII,

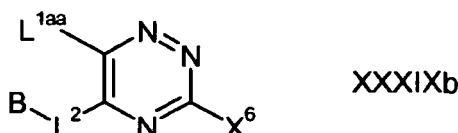


wherein A, B, L^1 and L^2 are as defined hereinbefore, with a compound of formula XXXIXa,



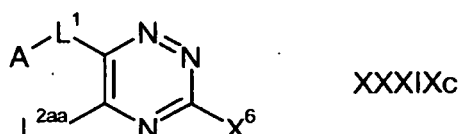
wherein R^{4x} is as described hereinbefore, under reaction conditions known to those skilled in the art, for example as described in French patent no. 2,485,531.

[0158] Compounds of formula XXVIII wherein L^1 represents a direct bond and X^6 represents a sulfone group (e.g. $-\text{S}(\text{O})_2\text{CH}_3$, $-\text{S}(\text{O})_2\text{CF}_3$ or $-\text{S}(\text{O})_2\text{-PhMe}$), may be prepared by reaction of a compound of formula XXXIXb,



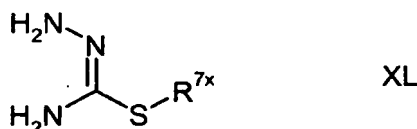
wherein L^{1aa} represents a halogen atom (such as chloro, bromo or, preferably, iodo), X^6 represents a sulfone group, and A, B and L^2 are as defined hereinbefore, with a compound of formula VI as defined hereinbefore, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (ii)(a) above).

[0159] Compounds of formula XXVIII wherein L^2 represents a direct bond and X^6 represents a sulfone group (e.g. $-S(O)_2CH_3$, $-S(O)_2CF_3$ or $-S(O)_2-PhMe$), may be prepared by reaction of a compound of formula XXXIXc,



wherein L^{2aa} represents a halogen atom (such as chloro, bromo or, preferably, iodo), X^6 represents a sulfone group, and A, B and L^1 are as defined hereinbefore, with a compound of formula XVIII as defined hereinbefore, under reaction conditions known to those skilled in the art, for example such as those described in respect of process step (ii)(a) above).

[0160] Other intermediate compounds (e.g. intermediate XXVIII) which contain the 1,2,4-triazine core common to the compounds of formula I, may be prepared by reaction of a compound of formula XXXI as defined above, with a compound of formula XL,



wherein R^{7x} represents a corresponding C_{1-6} alkyl or aryl group, under reaction conditions known to those skilled in the art, for example as described in WO 92/02513, optionally followed by oxidation of the sulfur atom to the desired oxidation state.

[0161] Compounds of formula VI wherein L^{x1b} represents $B(OH)_2$, may be prepared by reaction of a compound of formula XLI,



wherein A is as defined hereinbefore, with a boronic acid derivative (such as bis(pinacolato)diboron, trimethylborate), under reaction conditions known to those skilled in the art, for example in the presence of an appropriate metal catalyst (or a salt or complex thereof, such as $[Ir(COD)(OMe)]_2$, $[Rh(COD)(OMe)]_2$, $[Rh(COD)Cl]_2$, Cu, $Cu(OAc)_2$, CuI (or CuI/di-amine complex), copper tris(triphenyl-phosphine)bromide, $Pd(OAc)_2$ or $Pd_2(dba)_3$) and an optional additive (such as 4,4'-di-*tert*-butyl-2,2'-bipyridine (dtbpy), Ph_3P , 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl, xantphos, NaI or an appropriate crown ether such as 18-crown-6-benzene), in the presence of an appropriate base (such as NaH, Et_3N , pyridine, *N,N'*-dimethylethylenediamine, triethanolamine, *N*-methyldiethanolamine, *N,N*-diisopropylethanolamine, triisopropylamine, Na_2CO_3 , K_2CO_3 , K_3PO_4 , Cs_2CO_3 , *t*-BuONa or *t*-BuOK or a mixture thereof, optionally in the presence of 4A molecular sieves), in a suitable solvent (e.g. dichloromethane, dimethylformamide, dioxane, toluene, ethanol, isopropanol, dimethylsulfoxide, acetonitrile, dimethylacetamide, tetrahydrofuran or a mixture thereof, or an ionic liquid (e.g. $[bmim][BF_4]$)), and at a suitable temperature (e.g. from room temperature to about 180°C), e.g. as described in J. M. Murphy, C. C. Tzschucke, J. F. Hartwig, *Org. Lett.*, 2007, 9, 757-760.

[0162] Compounds of formulae IIa, IIb, III, IV, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI, XXVII, XXIX, XXX, XXXI, XXXII, XXXIV, XXXV, XXXVI, XXXVII, XXXVIII, XXXIXa, XXXIXb, XXXIXc, XL and XLI are either commercially available, are known in the literature, or may be obtained either by analogy with the processes described herein (or processes described in references contained herein), or by conventional synthetic procedures, in accordance with standard techniques, from available starting materials using appropriate reagents and reaction conditions.

[0163] Substituents, such as R^{3a} , R^{4a} , R^{4b} , R^{4c} and R^{4d} in final compounds of formula I (or precursors thereto and

other relevant intermediates) may be modified one or more times, after or during the processes described above by way of methods that are well known to those skilled in the art. Examples of such methods include palladium-mediated cross couplings or, particularly, substitutions, reductions (e.g. carbonyl bond reductions in the presence of suitable and, if necessary, chemoselective, reducing agents such as LiBH_4 or NaBH_4), oxidations, alkylations, acylations, hydrolyses, esterifications and etherifications. The precursor groups can be changed to a different such group, or to the groups defined in formula I, at any time during the reaction sequence.

[0164] Compounds of the invention may be isolated from their reaction mixtures using conventional techniques (e.g. recrystallisation, column chromatography, preparative HPLC, etc.).

[0165] In the processes described above and hereinafter, the functional groups of intermediate compounds may need to be protected by protecting groups.

[0166] The protection and deprotection of functional groups may take place before or after a reaction in the above-mentioned schemes.

[0167] Protecting groups may be removed in accordance with techniques that are well known to those skilled in the art and as described hereinafter. For example, protected compounds/intermediates described herein may be converted chemically to unprotected compounds using standard deprotection techniques.

[0168] The type of chemistry involved will dictate the need, and type, of protecting groups as well as the sequence for accomplishing the synthesis.

[0169] The use of protecting groups is fully described in "Protective Groups in Organic Chemistry", edited by J W F McOmie, Plenum Press (1973), and "Protective Groups in Organic Synthesis", 3rd edition, T.W. Greene & P.G.M. Wutz, Wiley-Interscience (1999).

[0170] As used herein, the term "functional groups" means, in the case of unprotected functional groups, hydroxy-, thiol-, aminofunction, carboxylic acid and, in the case of protected functional groups, lower alkoxy, N-, O-, S- acetyl, carboxylic acid ester.

[0171] Some of the intermediates referred to hereinbefore are novel. We therefore also disclose: (a) a compound of formula XXVIII, or a protected derivative thereof, in which X^6 represents $\text{SO}_2\text{R}^{\text{x}6}$, wherein $\text{R}^{\text{x}6}$ represents C_{1-12} alkyl optionally substituted by one or more halo (e.g. fluoro) atoms, or $\text{R}^{\text{x}6}$ represents phenyl optionally substituted by one or more substituents selected from C_{1-6} alkyl (e.g. methyl), nitro and halo (e.g. bromo); (b) a compound of formula XXXIXb, or a protected derivative thereof; and (c) a compound of formula XXXIXc, or a protected derivative thereof.

Biological Tests

[0172] The cell lines mentioned below were all purchased from the European Collection of Cell Cultures (ECACC: <http://www.hpacultures.org.uk/collections/ecacc.jsp>).

Test A

HEK293-hA_{2a}[³H]-ZM241385/CHO-hA₁[³H]DPCPX binding assay

Test compounds

[0173] All test compounds were prepared as a stock solution of 10 mM in 100% DMSO.

[0174] Inhibition binding assays were performed using 2.5 μg of membranes prepared from HEK293 cells transiently transfected with human adenosine A_{2a} receptor or 10 μg of membranes prepared from CHO cells stably transfected with human adenosine A₁ receptor. Membranes were incubated in 50 mM Tris-HCl (HEK293-hA_{2a}; pH 7.4) or 20 mM HEPES, 100 mM NaCl, 10 mM MgCl_2 (CHO-hA₁; pH 7.4) in the presence of varying concentrations of test compound and 1 nM [³H]ZM241385 (HEK293-hA_{2a}) or [³H]DPCPX (CHO-hA₁) at 25°C for 1 h. The assay was then terminated by rapid filtration onto GF/B grade Unifilter plates using a TomTec cell harvester, followed by 5 x 0.5 ml washes with double distilled H₂O. Nonspecific binding was defined in the presence of 1 μM CGS15943 (HEK293-hA_{2a}) or 1 μM DPCPX (CHO-hA₁). Bound radioactivity was determined by liquid scintillation counting (Trilux Microbeta® Counter) and inhibition curves were analysed using a four-parameter logistic equation. IC_{50} values were converted to K_i values with the Cheng-Prusoff equation using a K_D value derived from saturation binding studies.

Test B

Catalepsy Reversal Test

[0175] The dopamine D₂ receptor antagonist, haloperidol, induces Parkinsonism in humans and induces motor effects in rats such as catalepsy. There is considerable evidence that adenosine A_{2A} receptor antagonists reverse haloperidol-

induced motor effects in preclinical studies. Suggested mechanisms by which these effects are mediated include the hypothesis that A_{2A} receptor antagonism modulates D₂ receptor sensitivity such that D₂ receptors exhibit increased sensitivity to striatal dopamine in the presence of an A_{2A} receptor antagonist. The present study determines the ability of haloperidol-induced catalepsy in rats to be reversed by novel A_{2A} receptor antagonists.

[0176] Catalepsy was monitored individually in Sprague-Dawley rats (Charles River, UK; 200-250 g; n=8 /group) by gently placing each paw in turn on a large rubber bung. A score of 1 is given for each paw which remains in position for 15 seconds, giving each rat a maximum score of 4. Haloperidol (0.82 mg/kg, i.p.; 150 min pre-test time) induces significant cataleptic behaviour in rats (average score 3.1). The effect of selected compounds of the invention (2- 10 mg/kg or 0.3 - 3 mg/kg, p.o.; 120 min pre-test time) on catalepsy was established by administration of said compounds to rats pre-treated with haloperidol as described above.

[0177] Details of a similar test may be found in, for example, Hodgson et al., J. Pharmacol. Exp. Ther. 330, 2009, 294-303.

Examples

[0178] Where no preparative routes are included, the relevant intermediate is commercially available (e.g. from Sigma Aldrich or Manchester Organics Ltd).

General procedures

[0179] Commercial reagents were utilized without further purification. Room temperature refers to 20-27 °C. Melting points, wherever reported, are uncorrected. ¹H-NMR spectra were recorded at 400 MHz on a Bruker instrument.. Chemical shift values are expressed in parts per million, i.e. (δ)-values. The following abbreviations are used for the multiplicity for the NMR signals: s=singlet, b=broad, d=doublet, t=triplet, q=quartet, qui=quintet, h=heptet, dd=doublet of doublets, dt=double of triplets, m=multiplet. Coupling constants are listed as J values, measured in Hz. NMR and mass spectroscopy results were corrected to account for background peaks. Chromatography refers to column chromatography performed using 60 - 120 mesh silica gel and executed under nitrogen pressure (flash chromatography) conditions. The TLC for monitoring the reaction means the TLC run using the specified mobile phase and the Silica gel F254 as a stationary phase from Merck. Microwave-mediated reactions were performed in a Biotage Initiator. HPLC purities were measured under the following conditions:

Instrument: Waters Alliance 2695. Column: Sunfire C-18, 250 x 4.6 mm, 5 μm, or equivalent. Gradient [time (min)]/% solvent B in A]: 0.00/10, 9.00/90, 11.00/100, 20.00/100, 20.01/10, 25.00/10 (solvent A = 0.1% formic acid in water; solvent B = 0.1% formic acid in acetonitrile). 1 mL/min; detection wavelength specified for each compound in the detailed experimental section.

Mass spectroscopy was carried out on a Shimadzu LCMS-2010 EV, using electrospray conditions as specified for each compound in the detailed experimental section.

LCMS experiments were carried out with methods A-C, as specified for each compound in the detailed experimental section, using the following conditions:

LCMS method A: Instruments: Waters Alliance 2795, Waters 2996 PDA detector, Micromass ZQ. Column: Waters X-Bridge C-18, 2.5micron, 2.1 x 20mm or Phenomenex Gemini-NX C-18, 3 micron, 2.0 x 30mm. Gradient [time (min)/solvent D in C (%]): 0.00/2, 0.10/2, 2.50/95, 3.50/95, 3.55/2, 4.00/2 (solvent C = 1.58g ammonium formate in 2.5L water + 2.7mL ammonia solution; solvent D = 2.5L Acetonitrile + 132mL (5%) solvent C + 2.7mL ammonia solution). Injection volume 5 μL; UV detection 230 to 400nm; column temperature 45 °C.

LCMS method B: Instrument: Waters Semi-Prep LCMS with ZQ MS. Column: Agilent Prep-C18 Scalar, 5 μm, 4.6 x 50 mm Detection wavelength: 254 nm and 215 nm. Gradient [time (min)/solvent B in A (%), flow rate]: 0.00/5 (2.5 mL/min), 0.10/5 (2.5 mL/min), 5.0/95 (2.5 mL/min), 5.50/95 (2.5 mL/min), 5.60/95 (3.5 mL/min), 6.60/95 (3.5 mL/min), 6.75/5 (3.5 mL/min) 6.90/5 (3.5 mL/min), 7.00/5 (2.5 mL/min), (solvent A: water with 0.1% NH₄OH; solvent B: MeOH with 0.1% NH₄OH).

LCMS method C: Instruments: Waters Alliance 2795, Waters 2996 PDA detector, Micromass ZQ. Column: Waters X-Bridge C-18, 2.5micron, 2.1 x 20mm or Phenomenex Gemini-NX C-18, 3 micron, 2.0 x 30mm. Gradient [time (min)/solvent D in C (%]): 0.00/2, 0.10/2, 8.40/95, 9.40/95, 9.50/2, 10.00/2 (solvent C = 1.58g ammonium formate in 2.5L water + 2.7mL ammonia solution; solvent D = 2.5L Acetonitrile + 132mL (5%) solvent C + 2.7mL ammonia solution). Injection volume 5 μL; UV detection 230 to 400nm; column temperature 45°C; 1.5 mL/min. Preparative HPLC was typically carried out with instrument A or B using an acidic method (gradients of acetonitrile and water, each containing 0.1% formic acid) or a basic method (gradients of methanol and water, each containing 0.1 % NH₄OH)

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Instrument A conditions: Waters delta 600 HPLC. Column: X-bridge C-18, 250 X 19 mm, 5 μ m, or equivalent.
Flow rate: 19 mL/min.
Instrument B: Gilson HPLC. Column: Agilent Zorbax Extend Cartridge, 5 μ m, 21.2x100 mm. Guard Column:
Agilent Prep-C18 Guard Cartridge, 10 μ m. Flow rate: 28 mL/min.

Preparation 1

Procedure for the preparation of methyl hydrazinecarbimidothioate

[0180] Methyl hydrazinecarbimidothioate was prepared by drop wise addition of methyl iodide (2.80 g, 19.8 mmol) to a solution of thiosemicarbazide (1.80 g, 19.75 mmol) in ethanol (50 mL). The resulting mixture was refluxed for 2.5 hrs with TLC monitoring (methanol/DCM, 1:9). The reaction mixture was then concentrated *in vacuo* and the crude compound (1.80 g, 90%) was used in the next step without any further purification.

Mass spectroscopy: (ESI +ve) 106 [M-H]⁺

Typical procedure for the preparation of arylglyoxal derivatives, as exemplified with (i) 4-fluorophenylglyoxal

[0181] Selenium dioxide (6.70 g, 61.0 mmol) was added to a solution of 4-fluoroacetophenone (8.43 g, 61.0 mmol) in dioxane (100 mL) and water (3 mL), and the resulting mixture was heated at 55°C until complete dissolution of selenium dioxide had occurred. The reaction mass was then refluxed for 5-6 hrs. After completion of the reaction (TLC), the mixture was filtered and the filtrate was concentrated *in vacuo* affording a viscous oil. Water (50 mL) was added and the resulting mixture was stirred for 12 hrs, after which time the solid was collected on a filter, washed with water (25 mL) and dried *in vacuo*, affording 4-fluorophenylglyoxal (6.60 g, 85%).

¹H NMR: (400 MHz, CDCl₃) δ : 7.18 (m, 2H), 8.11 (d, 2H), aldehyde CHO signal not observed.

(ii) (3-Chloro-5-fluorophenyl)(oxo)acetaldehyde

[0182] (3-Chloro-5-fluorophenyl)(oxo)acetaldehyde (27 g, 84%) was prepared from 3-chloro-5-fluoro acetophenone (30.0 g, 174.4 mmol) and selenium dioxide (21.28 g, 191.8 mmol) according to the typical procedure used for Preparation 1.

(iii) (3,5-Difluorophenyl)(oxo)acetaldehyde

[0183] (3,5-Difluorophenyl)(oxo)acetaldehyde (28 g, 84%) was prepared from 3,5-difluoro acetophenone (30.0 g, 192.3 mmol) and selenium dioxide (23.55 g, 214.0 mmol) according to the typical procedure used for Preparation 1.

(iv) 4-(Methoxymethyl)phenylglyoxal

Step 1: Preparation of 4-(Methoxymethyl)benzonitrile

[0184] 4-(Hydroxymethyl) benzonitrile (6.0 g, 45.09 mmol) was dissolved in THF (60 mL), cooled to -5°C to -10°C and treated with sodium hydride (2.16 g, 90.19 mmol). The resulting mixture was stirred for 30 minutes then treated with methyl iodide (9.6 g, 67.65 mmol) at RT for 2 hours. After completion of the reaction (TLC; ethyl acetate/Hexane, 5:5), the mixture was poured into water (50 mL) and extracted with ethyl acetate (3 $\times$ 25 mL). The separated organic layers were combined, dried over Na₂SO₄ and concentrated *in vacuo*. The crude compound was purified by gradient flash chromatography, eluting with 5% ethyl acetate in hexane to afford 4-(methoxymethyl)benzonitrile (6.7 g, 90%).

HPLC purity: 99.20% (232 nm)

Mass spectroscopy: (ESI +ve) 148.0 [M+H]⁺.

Step 2: Preparation of 1-[4-(methoxymethyl)phenyl]ethanone

[0185] 4-(Methoxymethyl)benzonitrile (6.0 g, 40.82 mmol) was dissolved in THF/diethyl ether (1:1, 60 mL) and the resulting solution was cooled to -10°C. 3 M solution of methyl magnesium iodide (13.57 g, 81.63 mmol) was added and the resulting mixture was stirred at this temperature for 5 hours. After completion of the reaction (TLC; toluene/methanol, 97:3), the mixture was poured into acidified water (50 mL; pH 3-4) and extracted with ethyl acetate (3 $\times$ 50 mL). The separated organic layers were combined, dried over Na₂SO₄ and concentrated *in vacuo*. The crude compound was purified by gradient flash chromatography, eluting with 8% ethyl acetate in hexane to afford the target compound (3.7 g, 55%).

Mass spectroscopy: (ESI +ve) 165.0 [M+H]⁺.

Step 3: Preparation of 4-(methoxymethyl)phenylglyoxal

[0186] Selenium dioxide (3.53 g, 31.84 mmol) was dissolved in 1,4-dioxane (50 mL) and water (0.5 mL). The solution was warmed to 40°C and treated with 1-(4-(methoxymethyl)phenyl)ethanone (3.9 g, 26.53 mmol); the resulting mixture was refluxed for 6 hours and monitored by TLC (chloroform/methanol, 95:5). After completion of the reaction, the mixture was filtered through celite and concentrated *in vacuo*. The crude compound was purified by column chromatography eluting with up to 15% ethyl acetate in hexane, affording the target glyoxal (4.0 g, 85%).

Mass spectroscopy: (ESI +ve) 179.0[M-H]⁺

(v) 2-Pyrimidineglyoxal

Step 1: Preparation of 1-(pyrimidin-2-yl)ethanone

[0187] A solution of 2-cyano-pyrimidine (10.0 g, 95.2 mmol) in THF (100 mL) was cooled to -5 °C and treated with a 3 M solution of methyl magnesium bromide in THF (38.0 mL, 98.4 mmol). The reaction was stirred at 0 °C for two hours until completion was observed by TLC (chloroform/methanol, 9:1). The reaction mixture was poured in water; the pH was adjusted to 5-6 and the aqueous layer was extracted with ethyl acetate (3 x 150 mL). The combined organic layers were concentrated under reduced pressure and the crude compound was purified by column chromatography, eluting with chloroform to afford the target compound (6.5 g, 48%).

HPLC purity: 97.2% (223 nm).

Mass spectroscopy: (ESI +ve) 123.1 [M+H]⁺

Step 2: Preparation of 2-pyrimidineglyoxal

[0188] A solution of selenium dioxide (15 g, 135 mmol) in ethanol (150 mL) was stirred at 50°C until a clear solution was obtained. 1-(Pyrimidin-2-yl)ethanone (10 g, 82.0 mmol) was added to the resulting mixture which was stirred for 6 hrs at 78°C, with TLC monitoring. This crude mixture was then used in next step without further purification.

Mass spectroscopy: (ESI +ve) 137.1 [M+H]⁺.

TLC R_f: 0.3 (chloroform/methanol, 9:1)

(vi) 2-Pyridylglyoxal

[0189] 2-Pyridylglyoxal (8.0 g, crude) was prepared from selenium dioxide (15 g, 135 mmol) and 2-acetyl pyridine (10 g, 82 mmol) according to the typical procedure used for Preparation 1.

TLC R_f: 0.1 (ethyl acetate)

Mass spectroscopy: (ESI +ve) 136.1 [M+H]⁺.

(vii) 3-pyridylglyoxal

[0190] 3-Pyridylglyoxal (5.0 g, crude) was prepared from selenium dioxide (6.82 g, 61.4 mmol) and 3-acetyl pyridine (5.0 g, 41.0 mmol) according to the typical procedure used for Preparation 1.

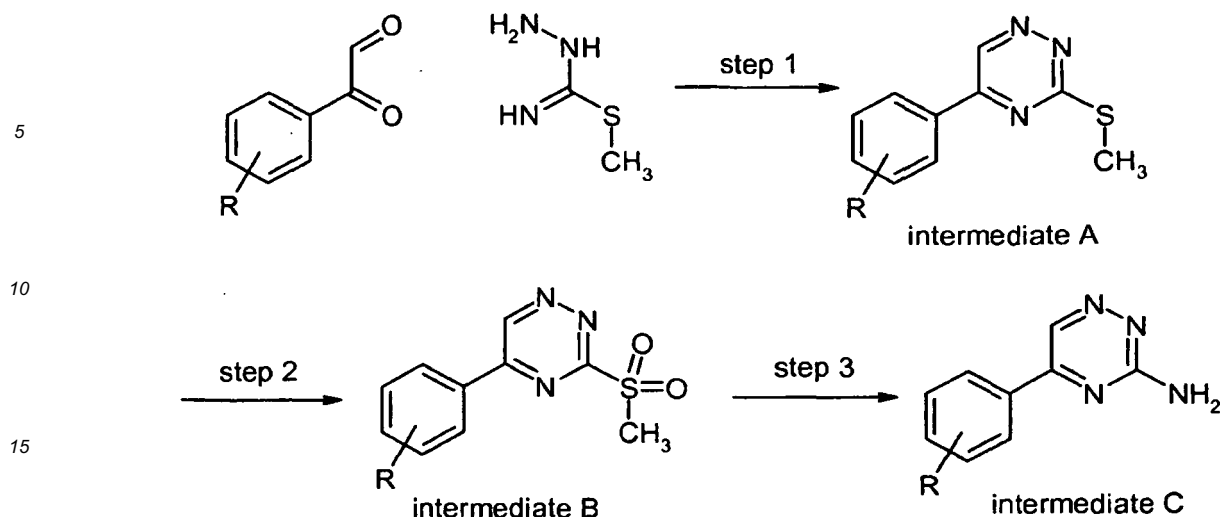
Mass spectroscopy: (ESI +ve) 136.1 [M+H]⁺.

TLC R_f: 0.1 (ethyl acetate)

[0191] Phenylglyoxal monohydrate is commercially available from Sigma Aldrich. 2,4-difluorophenylglyoxal and 3-methoxyphenylglyoxal are commercially available from Manchester Organics Ltd.

Preparation 2

[0192]



General Procedure for the Preparation of 5-Aryl-1,2,4-Triazin-3-Amine Derivatives from Aryl glyoxal Derivatives

[0193] Step 1: A solution of an arylglyoxal derivative (19.7 mmol) in ethanol (50 mL) is treated successively with sodium bicarbonate (3.32 g, 39.5 mol) and methyl hydrazinecarbamidithioate (19.7 mmol) and the resulting mixture is refluxed for 3 hrs. After completion of the reaction (TLC), the mixture is concentrated *in vacuo*, poured into water (50 mL), and extracted with DCM or ethyl acetate (2 x 25 mL). The combined organic extracts are then dried over Na_2SO_4 , concentrated *in vacuo*, and purified by gradient flash chromatography, affording intermediate A, a 3-(methylsuffanyl)-5-aryl-1,2,4-triazine derivative.

[0194] Step 2: *m*-CPBA (7.44 g, 43.3 mmol) is added to a solution of intermediate A (14.4 mmol) in DCM (50 mL) at -20 to -15°C and the resulting mixture is stirred at this temperature until the reaction is judged to be complete by TLC (typically 8 hrs). The reaction is then quenched with saturated aqueous NaHCO_3 solution (100 mL) and extracted with ethyl acetate (2 x 25 mL). The combined organic extracts are dried over Na_2SO_4 and evaporated under reduced pressure. The crude product, intermediate B, a 3-(methylsulfonyl)-5-aryl-1,2,4-triazine derivative, is purified by gradient flash chromatography.

[0195] Step 3: 0.5 M ammonia in THF (100 mL, 500 mmol) is cooled to -33°C and treated with ferric nitrate (5.50 g, 13.6 mmol) for 10 minutes. A solution of intermediate B (13.6 mmol) in THF (15 mL) is then introduced by drop wise addition and the mixture is stirred for 4 hrs with monitoring by TLC (methanol/DCM, 1:9). After completion of the reaction, the mixture is poured into water (150 mL) and extracted with DCM or ethyl acetate (2 x 50 mL). The combined organic extracts are then dried over Na_2SO_4 , concentrated *in vacuo* and treated with 4N aqueous HCl solution (40-50 mL) for 10 minutes. The aqueous phase is then extracted with ethyl acetate (150 mL), neutralized with aqueous K_2CO_3 solution (90-100 mL), and re-extracted with ethyl acetate (100 mL). All of the organic extracts are then combined, dried over Na_2SO_4 and concentrated *in vacuo*, affording intermediate C, a 5-aryl-1,2,4-triazin-3-amine derivative.

(i) 5-Phenyl-1,2,4-triazin-3-amine

[0196] Step 1: 3-(Methylsulfanyl)-5-phenyl-1,2,4-triazine (2.93 g, 73%) was prepared from methyl hydrazinecarbamidithioate (2.07 g, 19.7 mmol) and phenylglyoxal monohydrate (2.89 g, 19.7 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 204 $[\text{M}+\text{H}]^+$

^1H NMR: (400 MHz, CDCl_3) δ : 2.73 (s, 3H), 7.53-7.60 (m, 3H), 8.14-8.17 (m, 2H), 9.38 (s, 1H).

[0197] Step 2: 3-(Methylsulfonyl)-5-phenyl-1,2,4-triazine (3.20 g, 96%) was prepared from 3-(methylsulfanyl)-5-phenyl-1,2,4-triazine (2.93 g, 14.4 mmol) and *m*-CPBA (7.44 g, 43.3 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 236.9 $[\text{M}+\text{H}]^+$

[0198] Step 3: 5-Phenyl-1,2,4-triazin-3-amine (1.70 g, 73%) was prepared from 3-(methylsulfonyl)-5-phenyl-1,2,4-triazine (3.20 g, 13.6 mmol) and 0.5 M ammonia in THF (100 mL, 500 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 172.9 $[\text{M}+\text{H}]^+$

^1H NMR: (400 MHz, CDCl_3) δ : 7.30 (br s, 2H), 7.53-7.60 (m, 3H), 8.19-8.21 (dd, 2H), 9.20 (s, 1H).

(ii) 5-(2,4-Difluorophenyl)-1,2,4-triazin-3-amine

[0199] Step 1: 3-(Methylsulfanyl)-5-(2,4-difluorophenyl)-1,2,4-triazine (1.00 g, 78%) was prepared from methyl hydrazinecarbamidithioate (0.63 g, 6.0 mmol) and 2,4-difluorophenylglyoxal monohydrate (1.00 g, 6.0 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 239.9 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 2.69 (s, 3H), 6.96-7.02 (m, 1H), 7.06-7.11 (m, 1H), 8.27-8.33 (m, 1H), 9.46(s, 1H).

[0200] Step 2: 3-(Methylsulfonyl)-5-(2,4-difluorophenyl)-1,2,4-triazine (1.1 g, 97%) was prepared from 3-(methylsulfanyl)-5-(2,4-difluorophenyl)-1,2,4-triazine (1.00 g, 4.17 mmol) and *m*-CPBA (2.16 g, 4.17 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 271.9 [M+H]⁺

[0201] Step 3: 5-(2,4-Difluorophenyl)-1,2,4-triazin-3-amine (0.45 g, 53%) was prepared from 3-(methylsulfonyl)-5-(2,4-difluorophenyl)-1,2,4-triazine (1.10 g, 4.05 mmol) and 0.5 M ammonia in THF (50 mL, 25 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 208.9 [M+H]⁺

(iii) 5-(3-Methoxyphenyl)-1,2,4-triazin-3-amine

[0202] Step 1: 3-(Methylsulfanyl)-5-(3-methoxyphenyl)-1,2,4-triazine (1.01 g, 79%) was prepared from methyl hydrazinecarbamidithioate (0.58 g, 5.50 mmol) and 3-methoxyphenylglyoxal monohydrate (1.00 g, 5.50 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 233.9 [M+H]⁺

[0203] Step 2: 3-(Methylsulfonyl)-5-(3-methoxyphenyl)-1,2,4-triazine (0.90 g, 79%) was prepared from 3-(methylsulfanyl)-5-(3-methoxyphenyl)-1,2,4-triazine (1.00 g, 4.20 mmol) and *m*-CPBA (2.30 g, 12.8 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 265.9 [M+H]⁺

[0204] Step 3: 5-(3-Methoxyphenyl)-1,2,4-triazin-3-amine (0.31 g, 45%) was prepared from 3-(methylsulfonyl)-5-(3-methoxyphenyl)-1,2,4-triazine (0.90 g, 3.39 mmol) and 0.5 M ammonia in THF (50 mL, 25.0 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 202.9 [M+H]⁺

(iv) 5-(4-Fluorophenyl)-1,2,4-triazin-3-amine

[0205] Step 1: 3-(Methylsulfanyl)-5-(4-fluorophenyl)-1,2,4-triazine (6.00 g, 69%) was prepared from methyl hydrazinecarbamidithioate (4.51 g, 43.0 mmol) and 4-fluorophenylglyoxal monohydrate (6.60 g, 43.0 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 221.9 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 2.73 (s, 3H), 7.24 (d, 2H), 8.18 (d, 2H), 9.34 (s, 1H).

[0206] Step 2: 3-(Methylsulfonyl)-5-(4-fluorophenyl)-1,2,4-triazine (5.00 g, 72%) was prepared from 3-(methylsulfanyl)-5-(4-fluorophenyl)-1,2,4-triazine (6.00 g, 27.0 mmol) and *m*-CPBA (12.4 g, 81.0 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 253.9 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 3.55 (s, 3H), 7.34 (d, 2H), 8.33 (d, 2H), 9.82 (s, 1H).

[0207] Step 3: 5-(4-Fluorophenyl)-1,2,4-triazin-3-amine (2.80 g, 74%) was prepared from 3-(methylsulfonyl)-5-(4-fluorophenyl)-1,2,4-triazine (5.00 g, 19.7 mmol) and 0.5 M ammonia in THF (100 mL, 50.0 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 191.0 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 6.79 (s, 2H), 7.40 (m, 2H), 8.23 (m, 2H), 9.21 (s, 1H).

(v) 5-[4-(methoxymethyl)phenyl]-1,2,4-triazin-3-amine

[0208] Step 1: 5-[4-(methoxymethyl)phenyl]-3-(methylsulfanyl)-1,2,4-triazine (4.0 g, 72%) was prepared from methyl hydrazinecarbamidithioate (7.33 g, 31.46 mmol) and 4-(methoxymethyl)phenylglyoxal (4 g, 22.47 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 248.0 [M+H]⁺

[0209] Step 2: 5-[4-(methoxymethyl)phenyl]-3-(methylsulfonyl)-1,2,4-triazine (3.5 g, 83%) was prepared from 5-[4-(methoxymethyl)phenyl]-3-(methylsulfanyl)-1,2,4-triazine (3.75 g, 15.2 mmol) and *m*-CPBA (7.92 g, 45.6 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 279.9 [M-H]⁺

[0210] Step 3: 5-[4-(methoxymethyl)phenyl]-1,2,4-triazin-3-amine (2.2 g, 85%) was prepared from 5-[4-(methoxymethyl)phenyl]-3-(methylsulfonyl)-1,2,4-triazine (3.40 g, 12.2 mmol) in THF (35 mL) and treated with NH₃ gas by purging for 30 minutes, similarly to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 217.0 [M+H]⁺.

¹H NMR: (400 MHz, DMSO) δ: 3.32 (s, 3H), 4.48 (s, 2H), 7.22 (s, 2H), 7.47 (d, 2H), 8.14 (d, 2H), 9.2 (s, 1H).

(vi) 5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine

[0211] Step 1: 3-(methylsulfonyl)-5-(3-chloro-5-fluorophenyl)-1,2,4-triazine (16 g, 38.4%) was prepared from methyl hydrazinecarbamidithioate (25.5 g, 243 mmol) and 2-(3-chloro-5-fluorophenyl)-2-oxoacetaldehyde (30 g, 162 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 255.9 [M-H]⁺

[0212] Step 2: 3-(methylsulfonyl)-5-(3-chloro-5-fluorophenyl)-1,2,4-triazine (16 g, 88%) was prepared from 3-(methylsulfonyl)-5-(3-chloro-5-fluorophenyl)-1,2,4-triazine (16 g, 62.7 mmol) and *m*-CPBA (16.18 g, 94.11 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 287.9 [M-H]⁺

[0213] Step 3: 5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine (1.70 g, 73%) was prepared from 3-(methylsulfonyl)-5-(3-chloro-5-fluorophenyl)-1,2,4-triazine (16.0 g, 55.5 mmol) and ammonia gas according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 224.9 [M-H]⁺

(vii) 5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine

[0214] Step-1: 3-(methylsulfonyl)-5-(3,5-difluorophenyl)-1,2,4-triazine (28 g, 80.0%) was prepared from methyl hydrazine carbimidithioate (20.68 g, 197.4 mmol) and 2-(3,5-difluorophenyl)-2-oxoacetaldehyde (25 g, 147.0 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 240.0 [M-H]⁺

[0215] ¹H NMR: (400 MHz, CDCl₃) δ: 2.74 (s, 3H), 7.02-7.07 (m, 1H), 7.69 (d, 2H), 9.32 (s, 1H).

[0216] Step-2: 3-(methylsulfonyl)-5-(3,5-difluorophenyl)-1,2,4-triazine (31 g, 97.7%) was prepared from 3-(methylsulfonyl)-5-(3-chloro-5-fluorophenyl)-1,2,4-triazine (28.0 g, 117.0 mmol) and *m*-chloro perbenzoic acid (40 g, 234 mmol) according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 271.9 [M-H]⁺

[0217] Step-3: 5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (18 g, 74%) was prepared from 3-(methylsulfonyl)-5-(3,5-difluorophenyl)-1,2,4-triazine (31.0 g, 115.0 mmol) and ammonia gas according to the general procedure of Preparation 2.

Mass spectroscopy: (ESI +ve) 209.0 [M+H]⁺.

¹H NMR: (400 MHz, DMSO) δ: 7.37 (bs, 2H), 7.4 (m, 3H), 9.29 (s, 1H).

(viii) 5-(Pyrimidin-2-yl)-1,2,4-triazin-3-amine

[0218] Step 1: 3-(Methylsulfonyl)-5-(pyrimidin-2-yl)-1,2,4-triazine (5.0 g, 67%) was prepared from methylhydrazine-carbamidithioate (4.8 g 44.1 mmol) and 2-pyrimidineglyoxal (5.0 g, 37 mmol) according to the general procedure of Preparation 2.

[0219] Mass spectroscopy: (ES+I +ve) 206.0 [M+H]⁺.

[0220] Step 2: 3-(Methylsulfonyl)-5-(pyrimidin-2-yl)-1,2,4-triazine (5.0 g, crude) was prepared from 3-(methylsulfonyl)-5-(pyrimidin-2-yl)-1,2,4-triazine (5.0 g, 24.3 mmol) and *m*-CPBA (10.5 g, 58.0 mmol) according to the general procedure of Preparation 2, without chromatographic purification.

[0221] Mass spectroscopy: (ESI +ve) 237.0 [M+H]⁺.

TLC R_f: 0.5 (chloroform/methanol, 9:1)

[0222] Step 3: 5-(Pyrimidin-2-yl)-1,2,4-triazin-3-amine (1.0 g, 23%) was prepared from 3-(methylsulfonyl)-5-(pyrimidin-2-yl)-1,2,4-triazine (5.0 g, crude) and 0.5 M ammonia in THF (20 mL) according to the general procedure of Preparation 2.

[0223] Mass spectroscopy: (ESI +ve) 175 [M+H]⁺.

[0224] The following triazine intermediates were prepared from arylglyoxal derivatives in one step by condensation with aminoguanidine:

(ix) 5-(Pyridin-2-yl)-1,2,4-triazin-3-amine (1.5 g, 8% over 2 steps) was prepared from a crude sample of 2-pyridylglyoxal (8.0 g) and aminoguanidine hydrogen carbonate (6.0 g, 44 mmol). The reagents were refluxed in EtOH (100 mL) for 4 hours. The reaction mixture was then cooled, concentrated under reduced pressure and purified by gradient

flash chromatography (eluting with 0-30% ethyl acetate/hexane). The sample contained a mixture of isomers at this stage and was used without further purification.

HPLC purity: 35%, (265 nm)

Mass spectroscopy: (ESI +ve) 174 [M+H]⁺.

(x) 5-(Pyridin-3-yl)-1,2,4-triazin-3-amine (1.5 g, 16% over 2 steps) was prepared from a crude sample of 3-pyridylglyoxal (10.0 g) and aminoguanidine hydrogen carbonate (3.0 g, 22 mmol). The reagents were refluxed in EtOH (100 mL) for 4 hours. The reaction mixture was then cooled, concentrated under reduced pressure and purified by gradient flash chromatography (eluting with 0-30% ethyl acetate/hexane).

Mass spectroscopy: (ESI +ve) 174 [M+H]⁺.

TLC R_f = 0.2 (ethyl acetate)

[0225] The following 3-amino-5-aryl-1,2,4-triazine compounds are commercially available from UkrOrgSynth:

5-[4-(difluoromethoxy)phenyl]-1,2,4-triazin-3-amine;

5-(3-chloro-4-fluorophenyl)-1,2,4-triazin-3-amine;

5-(3-chlorophenyl)-1,2,4-triazin-3-amine;

5-(4-chlorophenyl)-1,2,4-triazin-3-amine;

5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine;

5-(3-fluorophenyl)-1,2,4-triazin-3-amine;

4-(3-amino-1,2,4-triazin-5-yl)benzonitrile;

5-(4-ethylphenyl)-1,2,4-triazin-3-amine;

5-(4-methylphenyl)-1,2,4-triazin-3-amine;

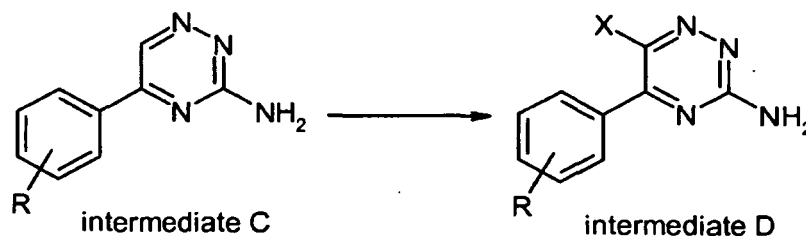
5-(2-fluorophenyl)-1,2,4-triazin-3-amine;

5-(4-methoxyphenyl)-1,2,4-triazin-3-amine and

5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine.

Preparation 3

[0226]



General Procedure for the Halogenation of 5-Aryl-1,2,4-Triazin-3-Amine Derivatives Method 1

[0227] A solution of intermediate C, a 5-aryl-1,2,4-triazin-3-amine derivative (8.70 mmol) in DMF (15 mL) is cooled to -25 °C and treated with a solution of *N*-chlorosuccinimide or *N*-bromosuccinimide (26.6 mmol) in DMF (10 mL) by drop wise addition. The reaction is stirred overnight and monitored by TLC (methanol/DCM, 1:9). After completion of the reaction, the mixture is poured into saturated bicarbonate solution (50 mL) and extracted with diethyl ether (25 × 3mL). The organic phases are combined, dried over Na₂SO₄ and concentrated *in vacuo*. The crude compound is purified by gradient flash chromatography, eluting with mixtures of ethyl acetate in hexane (e.g. 10% ethyl acetate in hexane) to afford the target compound, intermediate D.

Method 2

[0228] A solution of intermediate C, a 5-aryl-1,2,4-triazin-3-amine derivative (8.70 mmol) in DMF (15 mL) is cooled to -25°C and treated with a solution of *N*-chlorosuccinimide or *N*-bromosuccinimide (26.6 mmol) in DMF (10 mL) by drop wise addition. The reaction is stirred at room temperature and monitored by TLC or LCMS. After completion of the reaction, the mixture is poured into saturated bicarbonate solution (50 mL) and extracted with an organic solvent such as diethyl ether or ethyl acetate. The organic phases are combined, dried over Na₂SO₄ and concentrated *in vacuo*. The crude compound is purified by gradient flash chromatography, eluting with mixtures of ethyl acetate in hexane, or methanol in DCM, to afford the target compound, intermediate D.

(i) 6-Bromo-5-phenyl-1,2,4-triazin-3-amine

[0229] 6-Bromo-5-phenyl-1,2,4-triazin-3-amine (1.40 g, 64%) was prepared from 5-phenyl-1,2,4-triazin-3-amine (1.50 g, 8.70 mmol) and *N*-bromosuccinimide (4.50 g, 26.6 mmol) according to the general procedure of Preparation 3.

Mass spectroscopy: (ESI +ve) 251.9 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 5.49 (s, 2H), 7.49-7.58 (m, 3H), 7.82-7.85 (m, 2H).

(ii) 6-Chloro-5-phenyl-1,2,4-triazin-3-amine

[0230] 6-Chloro-5-phenyl-1,2,4-triazin-3-amine (0.38 g, 65%) was prepared from 5-phenyl-1,2,4-triazin-3-amine (0.50 g, 1.99 mmol) and *N*-chlorosuccinimide (0.50 g, 3.7 mmol) according to the general procedure of Preparation 3.

Mass spectroscopy: (ESI +ve) 207.9 [M+H]⁺

(iii) 6-Bromo-5-(2,4-difluorophenyl)-1,2,4-triazin-3-amine

[0231] 6-Bromo-5-(2,4-difluorophenyl)-1,2,4-triazin-3-amine (0.13 g, 21%) was prepared from 5-(2,4-difluorophenyl)-1,2,4-triazin-3-amine (0.45 g, 2.1 mmol) and *N*-bromosuccinimide (0.49 g, 2.80 mmol) according to the general procedure of Preparation 3.

Mass spectroscopy: (ESI +ve) 286.8 [M+H]⁺

(iv) 6-Bromo-5-(3-methoxyphenyl)-1,2,4-triazin-3-amine

[0232] 6-Bromo-5-(3-methoxyphenyl)-1,2,4-triazin-3-amine (0.18 g, 42%) was prepared from 5-(3-methoxyphenyl)-1,2,4-triazin-3-amine (0.31 g, 1.50 mmol) and *N*-bromosuccinimide (0.35 g, 1.99 mmol) according to the general procedure of Preparation 3.

Mass spectroscopy: (ESI +ve) 280.9 [M+H]⁺

(v) 6-Bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine

[0233] 6-Bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (1.95 g, 49%) was prepared from 5-(4-fluorophenyl)-1,2,4-triazin-3-amine (2.8 g, 14.00 mmol) and *N*-bromosuccinimide (7.87 g, 44.00 mmol) according to the general procedure of Preparation 3.

Mass spectroscopy: (ESI +ve) 268.9 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 5.43 (s, 2H), 7.19 (d, 2H), 7.87 (d, 2H).

[0234] The following intermediate compounds were also prepared according to the general procedure of Preparation 3:

No.	Product (yield)	Prepared From	LCMS	NMR
(vi)	6-bromo-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (1.71 g, 44%)	5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (2.8 g, 13.45 mmol)	Mass spectroscopy: m/z 287, 289 (M+H) ⁺ (ES ⁺); 285, 287 (M-H) ⁻ (ES ⁻), at 4.07 min, 100% (method B).	(400 MHz, DMSO) δ: 7.58 - 7.66 (m, 3H), 7.77 - 7.98 (m, 2H).
(vii)	6-bromo-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (1.27 g, 44.9%)	5-(3-fluorophenyl)-1,2,4-triazin-3-amine (2.00 g, 10.52 mmol)	Mass spectroscopy: m/z (Br) 269.6/271.7 (M+H) ⁺ (ES ⁺); 267.9/269.9 (M-H) ⁻ (ES ⁻), at 3.85 min, 100% (method B).	(400 MHz, DMSO) δ: 7.38-7.47 (m, 1H), 7.51-7.70 (m, 5H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(viii)	6-bromo-5-(3-chlorophenyl)-1,2,4-triazin-3-amine (1.1 g, 40%)	5-(3-chlorophenyl)-1,2,4-triazin-3-amine (2.00 g, 9.68 mmol)	Mass spectroscopy: m/z (Br, Cl) 285.7/287.7/289.7 (M+H) ⁺ (ES ⁺); 283.9/285.9/288.0 (M-H) ⁻ (ES ⁻), at 4.32 min, 100% (method B).	(400 MHz, DMSO) δ : 7.52-7.66 (m, 4H), 7.69-7.73 (m, 1H), 7.79 (t, J 1.7 Hz, 1H).
(ix)	4-(3-amino-6-bromo-1,2,4-triazin-5-yl)benzonitrile (605 mg, 21 %)	4-(3-amino-1,2,4-triazin-5-yl)benzonitrile (2.00 g, 10.14 mmol)	Mass spectroscopy: m/z (Br) 276.6/278.6 (M+H) ⁺ (ES ⁺); 274.9/276.9 (M-H) ⁻ (ES ⁻), at 3.42 min, 98.6% (method B).	(400 MHz, DMSO) δ : 7.66 (s, 2H), 7.86-7.94 (m, 2H), 7.99 - 8.06 (m, 2H).
(x)	6-bromo-5-(4-chlorophenyl)-1,2,4-triazin-3-amine (890 mg, 32%)	5-(4-chlorophenyl)-1,2,4-triazin-3-amine (2.00 g, 9.68 mmol)	Mass spectroscopy: m/z (Br, Cl) 285.0/287.0/289.0 (M+H) ⁺ (ES ⁺); 283.2/285.2/287.2 (M-H) ⁻ (ES ⁻), at 4.32 min, 98.0% (method B).	(400 MHz, DMSO) δ : 7.58 (s, 2H), 7.60-7.65 (m, 2H), 7.74 - 7.81 (m, 2H).
(xi)	6-bromo-5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-3-amine (1.32 g, 50%)	5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-3-amine (2 g, 8.40 mmol)	Mass spectroscopy: m/z 317, 319 (M+H) ⁺ (ES ⁺); 315-, 317 (M-H) ⁻ (ES ⁻), at 3.98min, 100% purity method B.	(400 MHz, DMSO) δ : 7.30 - 7.36 (m, 2H), 7.39 (t, 2JHF 72 Hz, 1H), 7.57 (s, 2H), 7.81 - 7.87 (m, 2H).
(xii)	6-bromo-5-[4-(methoxymethyl)phenyl]-1,2,4-triazin-3-amine (1.3 g, 43%)	5-[4-(methoxymethyl)phenyl]-1,2,4-triazin-3-amine (2.2 g, 15.2 mmol)	HPLC purity: 98.35% (242 nm); Mass spectroscopy: (ESI +ve) 295.0 [M+H] ⁺ .	(400 MHz, DMSO) δ : 3.33 (s, 3H), 4.48 (s, 2H), 7.44 (d, 2H), 7.54 (bs, 2H), 7.72 (d, 2H).
(xiii)	6-bromo-5-(3-chloro-4-fluorophenyl)-1,2,4-triazin-3-amine (1.12 g, 36%)	5-(3-chloro-4-fluorophenyl)-1,2,4-triazin-3-amine (2.2 g, 9.79 mmol)	Mass spectroscopy: m/z 303, 305 (M+H) ⁺ (ES ⁺); 301, 303 (M-H) ⁻ (ES ⁻), at 4.35min, 100% purity method B.	(400 MHz, DMSO) δ : 7.54-7.70 (m, 3H), 7.80 (ddd, J 8.6, 4.7, 2.2 Hz, 1H), 7.99 (dd, J 7.2, 2.2 Hz, 1H).

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(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xiv)	6-bromo-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine (8.0 g, 38%)	5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine (16.0 g, 55.55 mmol)	HPLC purity: 99.01% (247 nm); Mass spectroscopy: (ESI +ve) 304.0 [M+H] ⁺ .	(400 MHz, CDCl ₃) δ: 5.53 (bs, 2H), 7.27 (m, 1H), 7.48 (m, 1H), 7.64 (m, 1H).
(xv)	6-bromo-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (6.0 g, 24%)	5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (18.0 g, 62.0 mmol)	HPLC purity: 97.88% (247 nm); Mass spectroscopy: (ESI +ve) 286.8 [M+H] ⁺ .	(400 MHz, CDCl ₃) δ: 7.48 (m, 3H), 7.62 (s, 2H).
(xvi)	6-bromo-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine (0.90 g, 64%)	5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine (1.0 g, 5.75 mmol) and N-bromosuccinimide (1.53 g, 8.60 mmol)	HPLC purity: 99.08% Mass spectroscopy: (ESI +ve) 253. [M+H] ⁺ .	(400 MHz, DMSO) δ: 7.73 (t, 1H), 7.79 (s, 2H), 9.04 (d, 2H)
(xvii)	6-bromo-5-(pyridin-2-yl)-1,2,4-triazin-3-amine (0.18 g, 41%)	5-(pyridin-2-yl)-1,2,4-triazin-3-amine (0.30 g, 1.73 mmol) and N-bromosuccinimide (0.46 g, 2.60 mmol)	Mass spectroscopy: (ESI +ve) 253. [M+H] ⁺ . TLC R_f: 0.6 (ethyl acetate)	
(xviii)	6-bromo-5-(pyridin-3-yl)-1,2,4-triazin-3-amine (0.19 g, 33%)	5-(pyridin-3-yl)-1,2,4-triazin-3-amine (0.4 g, 2.3 mmol) and N-bromosuccinimide (0.61 g, 3.4 mmol)	TLC R_f: 0.6 (ethyl acetate) Mass spectroscopy: (ESI +ve) 253. [M+H] ⁺ .	
(xix)	6-bromo-5-(4-methylphenyl)-1,2,4-triazin-3-amine (450 mg, 34%)	5-(4-methylphenyl)-1,2,4-triazin-3-amine (930 mg, 5.0 mmol) and N-bromosuccinimide (2.67 g, 15.0 mmol)	Mass spectroscopy: m/z 265.0/267.0 (M+N) ⁺ (ESI+) at 3.0 min, >95% (method C).	(400 MHz, DMSO) δ: 3.35 (s, 3H), 7.41 (m, 2H), 7.74 (m, 2H) (NH ₂ not observed).
(xx)	6-bromo-5-(4-ethylphenyl)-1,2,4-triazin-3-amine (500 mg, crude; used without chromatographic purification)	5-(4-ethylphenyl)-1,2,4-triazin-3-amine (930 mg, 5.0 mmol) and N-bromosuccinimide (2.67 g, 15.0 mmol)	Mass spectroscopy: m/z 279.0/281.0 (M+H) ⁺ (ESI+) at 3.48 min, 90% (method C). TLC R_f: 0.11 (MeOH/DCM, 3:97)	
(xxi)	6-bromo-5-(2-fluorophenyl)-1,2,4-triazin-3-amine (700 mg, 20%)	5-(2-fluorophenyl)-1,2,4-triazin-3-amine (2.5g, 13.2 mmol) and N-bromosuccinimide (7.05 g, 39.6 mmol)	TLC R_f: 0.4 (EtOAc:isohexane 1:1)	(400 MHz, DMSO) δ: 7.32-7.42 (m, 2H), 7.54-7.67 (m, 4H)

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xxii)	6-bromo-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine (800mg, 27%)	5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine (2.5g, 10.4 mmol) and <i>N</i> -bromosuccinimide (7.05 g, 39.6 mmol)	Mass spectroscopy: m/z 288.9 (⁸¹ Br) (M+H) ⁺ (ES ⁺), at 1.29 min, 100% (method A)	(400 MHz, DMSO) δ: 7.43-7.86 (m, 5H)
(xxiii)	6-bromo-5-(4-methoxyphenyl)-1,2,4-triazin-3-amine (600mg, 17%)	5-(4-methoxyphenyl)-1,2,4-triazin-3-amine (2.5g, 12.4 mmol) and <i>N</i> -bromosuccinimide (7.05 g, 39.6 mmol)	TLC R_f: 0.4 (EtOAc:isohexane 1:1)	(400 MHz, DMSO) δ: 3.83 (s, 3H), 7.08 (d, J 9.0, 2H), 7.47-7.54 (bs, 2H), 7.80 (d, J 9.0, 2H)

Preparation 4

4a: General Procedure for S_NAr displacements of 2-chloropyridine derivatives with amines

[0235] A 2-chloropyridine derivative (1 equivalent) and an amine (typically 5 equivalents) were dissolved in MeCN and sealed in a microwave vial. The mixture was heated under microwave irradiation (typically 160-180 °C) for up to 1 hour with LCMS monitoring. If necessary, further equivalents of amine were added and the procedure repeated. Upon completion of the reaction, the mixture was evaporated under reduced pressure and purified by flash column chromatography, eluting with ethyl acetate/hexane mixtures, or by preparative HPLC.

[0236] The following intermediate compounds were prepared according to the general procedure of Preparation 4a:

No.	Product (yield)	Prepared from	LC/MS	NMR
(i)	2-ethyl(methyl)amino-methylpyridine (534 mg, 45%)	2-Chloro-6-methylpyridine (0.87 mL, 7.84 mmol) and ethylmethanamine (3.37 mL, 39.2 mmol)	Mass spectroscopy: m/z 151 (M+H) ⁺ (ES ⁺) at 1.56 min, 95% (method A) TLC R_f: 0.55 (EtOAc/isohexane, 1:20)	
(ii)	2-dimethylamino-6-methylpyridine (93 mg, 21%).	2-Chloro-6-methylpyridine (0.35 mL, 3.20 mmol) and dimethylamine (2.0 M solution in THF, 8.0 mL, 16.0 mmol)	Mass spectroscopy: m/z 137 (M+H) ⁺ (ES ⁺) at 1.37 min (method A) TLC R_f: 0.38. (Et ₂ O/isohexane, 1:20)	
(iii)	2-(azetidin-1-yl)-6-(trifluoromethyl)pyridine (807 mg, 72%)	2-Chloro-6-trifluoromethylpyridine (1.00g, 5.51 mmol) and azetidine (1.57g, 1.86ml, 27.5mmol)	Mass spectroscopy: m/z (ES ⁺) 223.0 (M+H) ⁺ at 1.68 min, 90% (method A)	(400 MHz, CDCl ₃) δ: 2.41 (quint., J7.5, 2H), 4.08 (t, J7.5, 4H), 6.36 - 6.39 (m, 1H), 6.89 - 6.91 (m, 1H), 7.49 - 7.53 (m, 1H).
(iv)	4-(6-methylpyridin-2-yl)morpholine (693 mg, 50%)	2-Chloro-6-methylpyridine (1.00g, 0.87ml, 7.84mmol) and morpholine (3.41g, 3.45ml, 39.2mmol)	Mass spectroscopy: m/z (ES ⁺) 179.0 (M+H) ⁺ at 1.26 min, 90% (method A).	(400 MHz, CDCl ₃) δ: 2.41 (s, 3H), 3.48-3.50 (m, 4H), 3.81-3.84 (m, 4H), 6.42-6.44 (m, 1H), 6.53-6.55 (m, 1H), 7.38-7.42 (m, 1H).

4b: Preparation of other pyridine derivatives**(i) Preparation of 2,6-d₆-dimethylpyridine**

[0237] Methyl-d₃-magnesium iodide solution (9.60 mL, 1 M in diethyl ether, 9.60 mmol) was added drop-wise over 10 mins to a solution of 2,6-dibromopyridine (947 mg, 4.00 mmol) and iron(III)acetylacetonate (141 mg, 0.40 mmol) in THF (30 mL) and NMP (3 mL) under N₂. After stirring at ambient temperature for 40 mins, 1 M aqueous HCl (10 mL) was added and the mixture stirred for 5 mins. Diethyl ether (20 mL) was added and the phases were separated. The organic phase was extracted with water (2x10 mL) and the combined aqueous phases were then basified by the addition of 1M aqueous NaOH (15 mL). The aqueous phase was extracted with DCM (3 x 25 mL) and the combined organic phases concentrated *in vacuo*. Purification by gradient flash chromatography (SiO₂, 5 to 20% EtOAc in isohexane) yielded the title compound as a clear oil (430 mg, 95%).

¹H NMR: (400 MHz, CDCl₃) δ: 6.95 (d, J 7.8, 2H), 7.45 (t, J = 7.8, 1H).

TLC R_f: 0.30 (EtOAc/isohexane, 1:4)

(ii) Preparation of 2-d₃-methyl-6-(trifluoromethyl)pyridine

[0238] A mixture of 2-chloro-6-(trifluoromethyl)pyridine (2.69 g, 14.8 mmol) and iron(III)acetylacetonate (523 mg, 1.48 mmol) in THF (100 mL) and NMP (10 mL) was stirred at 0 °C under N₂ for 5 mins. Methyl-d₃-magnesium iodide solution (18.0 mL, 1M in diethyl ether, 18.0 mmol) was added drop-wise over 10 mins, and the mixture was stirred under N₂ at 0 °C for 5 mins, then ambient temperature for 75 mins. 1 M aqueous HCl (50 mL) was added and the mixture was stirred for 5 mins before addition of diethyl ether (50 mL) and separation of the phases. The organic phase was washed with 0.5 M aqueous HCl (50 mL) and water (50 mL) and the combined aqueous phases were extracted with diethyl ether (2 x 50 mL). The combined organic phases were concentrated to a volume of approximately 25 mL and short path distillation (bp 28-30 °C at 35 mbar) yielded a clear oil to which was added DCM (5 mL) and H₂O (5 mL). The phases were separated and the aqueous phase was extracted with DCM (2 x 5 mL); the combined organic phases were concentrated *in vacuo* to yield the title compound (639 mg, 26%) as a clear oil.

¹H NMR: (400 MHz, CDCl₃) δ: 7.34 (d, J 7.8, 1H), 7.49 (d, J 7.8, 1H), 7.75 (t, J 7.8, 1H). Bp: 28-30 °C at 35 mbar

(iii) Preparation of 2-cyclopropyl-6-(trifluoromethyl)pyridine

[0239] 2-Chloro-6-trifluoromethyl pyridine (451 mg, 2.5 mmol), cyclopropyltrifluoroborate potassium salt (373 mg, 2.52 mmol), palladium acetate (11 mg, 0.05 mmol), di(1-adamantyl)-n-butylphosphine (27 mg, 0.075 mmol), and cesium carbonate (2.4 g, 7.5 mmol) were suspended in a mixture of toluene and water (10:1, 10 mL). After flushing the vessel under a stream of nitrogen gas for 5 minutes, the reaction tube was sealed and then heated at 100 °C for 18 hours. On cooling, the mixture was partitioned between DCM (15 mL) and water (15 mL). The separated aqueous phase was extracted with DCM (2 x 15 mL) and the combined organic phases were passed through a phase separator and concentrated *in vacuo*, affording a yellow oil which was used without further purification (423 mg, crude).

LCMS: major peak observed at 1.77 min; poor ionisation (method A)

TLC R_f: 0.6 (EtOAc/hexane, 1:9).

(iv) Preparation of 2-ethyl-6-(trifluoromethyl)pyridine

[0240] 2-Chloro-6-trifluoromethyl pyridine (451 mg, 2.5 mmol), ethyltrifluoroborate potassium salt (374 mg, 2.75 mmol), palladium acetate (11 mg, 0.05 mmol), di(1-adamantyl)-n-butylphosphine (27 mg, 0.075 mmol), and cesium carbonate (2.4 g, 7.5 mmol) were suspended in a mixture of toluene and water (10:1, 10 mL). After flushing the vessel under a stream of nitrogen gas for 5 minutes, the reaction tube was sealed and then heated at 100 °C for 18 hours. On cooling, the mixture was partitioned between DCM (15 mL) and water (15 mL). The separated aqueous phase was extracted with DCM (2 x 15 mL) and the combined organic phases were passed through a phase separator and concentrated *in vacuo*, affording a yellow oil which was used without further purification (460 mg, crude)

LCMS: major peak observed at 1.53 min; poor ionisation (method A)

TLC R_f: 0.55 (EtOAc/hexane, 1:9).

(v) Preparation of 2-ethylamino-6-methylpyridine

[0241] 2-Amino-6-methylpyridine (1.00 g, 9.25 mmol) and acetaldehyde (0.52 mL, 9.34 mmol) were stirred together in anhydrous methyl alcohol for 1 hour at room temperature under a nitrogen atmosphere. The mixture was then treated with sodium triacetoxymethylborohydride (7.84 g, 37.0 mmol) and five drops of acetic acid and all was allowed to continue

stirring for 4 hours. The reaction mixture was concentrated *in vacuo*. The residue was partitioned between water and DCM, and the separated aqueous phase was extracted twice with DCM. The combined organics were dried over MgSO₄, filtered and concentrated *in vacuo* to give a mobile oil which was purified by flash column chromatography, eluting with 2% MeOH/DCM, to give 2-ethylamino-6-methylpyridine (636 mg, 51 %).

LCMS: 137.0 [M+H]⁺ (ES+) at 1.17 min, 100% (method A).

Preparation 5

General Procedure for the Preparation of 2-Fluoromethylpyridine derivatives

[0242] (Diethylamino)sulfur trifluoride (1.0 mL, 7.7 mmol) was added to a solution of a 2-pyridinylmethanol derivative (7.0 mmol) in DCM (30 mL, anhydrous), drop-wise, under nitrogen in an acetone /CO₂ bath at -20°C. The resultant solution was allowed to warm to ambient temperature and then stirred until complete conversion was observed by TLC. The reaction was quenched with ice and then basified to pH 8-10 with solid sodium hydrogen carbonate. The layers were then separated, and the organic phase washed successively with water and then saturated brine solution, then dried (MgSO₄), concentrated *in vacuo* and purified by gradient flash chromatography, affording the 2-fluoromethylpyridine derivative.

[0243] The following intermediate compounds were prepared according to the general procedure of Preparation 5:

No.	Product (yield)	Prepared from	LCMS/TLC	NMR
(i)	2-(fluoromethyl)-6-methylpyridine (850 mg, 84%)	6-methyl-2-pyridine methanol (1.0 g, 8.1 mmol)	TLC R_f: 0.9 (EtOAc/isohexane 1:9)	(400MHz, DMSO) δ: 2.48 (s, 3H), 5.43 (d, J 47.2 2H), 7.23 (d, J 7.8, 1H), 7.29 (d, J 7.8, 1H), 7.76 (t, J 7.8, 1H)
(ii)	2-chloro-6-(fluoromethyl)pyridine (200 mg, 17%)	(6-chloro-2-pyridinyl)methanol (1.0 g, 7.0 mmol)	TLC R_f: 0.9 (EtOAc/isohexane 1:9)	(400MHz, DMSO) δ: 5.51 (d, J 46.7Hz, 2H), 7.55 (d, J 7.78, 1H), 7.57 (d, J 7.78, 1H), 8.00 (t, J 7.78, 1H)
(iii)	2,6-bis-(fluoromethyl)pyridine (850mg, 41%)	2,6-bis(hydroxymethyl)pyridine (2.0 g, 14.4 mmol)	TLC R_f: 0.9 (EtOAc/isohexane 1:9)	(400MHz, DMSO) δ: 5.50 (d, J 46.6, 2H), (d, J 7.78, 2H), 7.98 (t, J 7.78, 1H)

Preparation 6

General Procedure for the Preparation of 2-Difluoromethylpyridine derivatives

[0244] (Diethylamino)sulfur trifluoride (2.4 mL, 18.3 mmol) was added to a solution of a 2-pyridinecarboxaldehyde derivative (8.3 mmol) in DCM (30 mL, anhydrous), drop-wise, under nitrogen in an acetone /CO₂ bath at -20°C. The resultant solution was allowed to warm to ambient temperature and then stirred until complete conversion was observed by TLC. The reaction was quenched with ice and then basified to pH 8-10 with solid sodium hydrogen carbonate. The layers were then separated, and the organic phase washed successively with water and then saturated brine solution, then dried (MgSO₄), concentrated *in vacuo* and purified by gradient flash chromatography, affording the 2-fluoromethylpyridine derivative.

[0245] The following intermediate compounds were prepared according to the general procedure of Preparation 6:

No.	Product (yield)	Prepared from	LCMS/TLC	NMR
(i)	2-chloro-6-(difluoromethyl)pyridine (1.1g, 86%)	6-chloro-2-pyridinecarboxaldehyde (1.0 g, 7.07 mmol)	TLC R_f: 0.9 (EtOAc/isohexane 1:9)	(400MHz, DMSO), δ: 4.69 (s, 1H), 7.50 (m, 2H), 7.91 (m, 1H)
(ii)	2-(difluoromethyl)-6-methylpyridine (410 mg, 35%)	6-methyl-2-pyridinecarboxaldehyde (1.0 g, 8.26 mmol)	TLC R_f: 0.9 (EtOAc/isohexane 1:9)	(400MHz, DMSO), δ: 2.53 (3H, s) 6.90 (d, J 55.2, 1H), 7.47 (m, 2H), 7.89 (m, 1H)

Preparation 7

General Procedure for the 4-borylation of 2,6-disubstituted pyridine derivatives

[0246] Methoxy(cyclooctadiene)rhodium(I) dimer (0.05 molar equivalents Rh), 4,4'-di-*tert*-butyl-2,2'-bipyridine(dtbpy) (0.05 molar equivalents), and bis(pinacolato)diboron (2 molar equivalents) were added to a flask which had been thoroughly purged with nitrogen. The flask was once more purged before adding hexane via syringe (final concentration of pyridine approximately 0.5 mM). The resulting mixture was heated at 50 °C for 10 minutes until the appearance of a dark red solution was observed. A pyridine derivative (1 molar equivalent) was then added by syringe and heating continued for a further 6 hours. After cooling to room temperature, the crude reaction mixture concentrated under reduced pressure. The resulting residue was purified by column chromatography, eluting with ethyl acetate/hexane mixtures to afford the target compound.

[0247] The following compounds were prepared according to the general procedure of Preparation 7, by reacting the indicated starting materials for 6 hours at 50 °C, unless otherwise stated:

No.	Product (yield)	Prepared from	LCMS/TLC	NMR
(i)	2,6-d ₆ -dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (1.56 g, crude) used without chromatographic purification	bis(pinacolato)diboron (1.93 g, 7.60 mmol) and 2,6-d ₆ -dimethylpyridine (430 mg, 3.80 mmol) were heated at 70 °C for 105 minutes according to the typical procedure.	Mass spectroscopy: m/z 240.1 [M+H] ⁺ (ESI +ve) at 0:1 min, 100% (method A).	
(ii)	2-d ₃ -methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (716 mg, 32%)	2-d ₃ -methyl-6-(trifluoromethyl)pyridine (639 mg, 3.89 mmol) and bis(pinacolato)diboron (1.98 g, 7.80 mmol) were heated at 70 °C for 3.5 hours according to the typical procedure.	Mass spectroscopy: m/z: 291.1 [M+H] ⁺ (ESI +ve) at 0.15 min, 100% (method A)	(400 MHz, CDCl ₃) δ: 1.37 (s, 12H), 7.70 (s, 1H), 7.82 (s, 1H).
(iii)	2-ethylamino-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (crude sample used without chromatographic purification)	bis(pinacolato) diborane (776 mg, 3.06 mmol) and 2-ethylamino-6-methylpyridine (277 mg, 2.04 mmol) were heated to 55 °C for 6 hours according to the typical procedure.	Mass spectroscopy: m/z 263.2 [M+H] ⁺ (ESI+) at 0.10min, (method A).	
(iv)	2-ethyl(methyl)amino-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (2.04 g, crude) used without chromatographic purification.	bis(pinacolato)diboron (1.81 g, 7.11 mmol) and 2-ethyl(methyl)amino-6-methylpyridine (534 mg, 3.55 mmol) were heated at 65 °C for 3 hours according to the typical procedure.	Mass spectroscopy: m/z 277 (M+H) ⁺ (ES) ⁺ at 1.11 min, (method A).	
(v)	2-dimethylamino-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (414 mg, crude) used without chromatographic purification.	2-dimethylamino-6-methylpyridine (93 mg, 0.68 mmol) and bis(pinacolato)diboron (348 mg g, 1.37 mmol) were heated at 70 °C for 2 hours according to the typical procedure.	No ionisation observed by LCMS, major peak at 0.8 min (method A).	
(vi)	2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (46.9 g, 94%)	2-methyl-6-chloro pyridine (25 g, 195.9 mmol) and bis(pinacolato)diboron (32.3 g, 127 mmol) according to the typical procedure.	HPLC purity: 99.33% (282nm) Mass spectroscopy: (ESI +ve) 254.1 [M+H] ⁺ .	(400 MHz, DMSO) δ: 1.30 (s, 12 H), 2.50 (s, 3H), 7.35 (s, 1H), 7.44 (s, 1H).

(continued)

No.	Product (yield)	Prepared from	LCMS/TLC	NMR
(vii)	2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (1.0 g, 30%)	2,6-dimethyl pyridine (1.5 g, 13.9 mmol) and bis(pinacolato)diboron (1.9 g, 7.69 mmol) according to the typical procedure.	HPLC purity: 93.33% (268nm) Mass spectroscopy: (ESI +ve) 234.1 [M+H] ⁺ .	(400 MHz, DMSO) δ : 1.27 (s, 12 H), 2.48 (s, 6H), 7.20 (s, 2H).
(viii)	2-(trifluoromethyl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (5.9 g, 83%)	2-trifluoromethyl-6-methyl pyridine (4.0 g, 24.8 mmol) and bis(pinacolato)diboron (4.09 g, 16.1mmol) according to the typical procedure.	HPLC purity: 95.65 % (210 nm) Mass spectroscopy: (ESI +ve) 287.8 [M+H] ⁺ .	(400 MHz, DMSO) δ : 1.31 (s, 12 H), 2.51 (s, 3H), 7.70 (s, 1H), 7.76 (s, 1H).
(ix)	2-dimethylamino-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (0.98 g, 53 %)	<i>N,N</i> -dimethylpyridine-2-amine (0.9 g, 7.4 mmol) and bis(pinacolato)diboron (1.12 g, 4.4 mmol) according to the typical procedure.	Mass spectroscopy: (ESI +ve) 248.9 [M] ⁺ . TLC R_f: 0.10 (ethyl acetate/hexane, 5:5)	
(x)	2-bromo-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (0.70 g, 81%)	2-methyl-6-bromo pyridine (0.50 g, 2.90 mmol) and bis(pinacolato)diboron (0.48 g, 1.8 mmol) according to the typical procedure.	Mass spectroscopy: (ESI +ve) 299.7 [M+H] ⁺ TLC R_f: 0.15 (ethyl acetate/hexane, 5:5)	
(xi)	2-cyano-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (0.70 g, 70%)	2-methyl-6-cyano pyridine (0.5 g, 4.2 mmol) and bis(pinacolato)diboron (0.69 g, 2.7 mmol),	Mass spectroscopy: (ESI +ve) 244.9 [M+H] ⁺ TLC R_f: 0.15, (ethyl acetate/hexane, 5:5)	
(xii)	1-oxo-2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (1.8 g, 90%)	2, 6-dimethyl pyridine- <i>N</i> -oxide (1.0 g, 8.12 mmol) and bis(pinacolato)diboron (1.34 g, 5.27 mmol)	Mass spectroscopy: (ESI +ve) 249.9 [M] ⁺ TLC R_f: 0.12 (ethyl acetate/hexane, 5:5)	
(xiii)	2-bromo-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-trifluoromethylpyridine (0.5 g, 64%)	2-trifluoro methyl 6-bromo pyridine (0.5 g, 2.20 mmol) and bis(pinacolato)diboron (0.36 g, 1.4 mmol) according to the typical procedure.	Mass spectroscopy: (ESI +ve) 352.9 [M] ⁺ . TLC R_f: 0.18 (ethyl acetate/hexane, 5:5)	

(continued)

No.	Product (yield)	Prepared from	LCMS/TLC	NMR
(xiv)	2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(difluoromethyl)pyridine (310 mg, 13%)	2-chloro-6-(difluoromethyl)pyridine (1.4 g, 8.56 mmol) and bis(pinacolato)diboron (10.1 g, 42.8 mmol) were heated at 60°C for 2 hours according to the typical procedure.	TLC R_f : streak from baseline to 0.3 (EtOAc/isohehexane, 1:9)	(400MHz, DMSO) δ: 1.33 (s, 12H), 7.03 (t, J 54.5, 1H), 7.75 (s, 1H), 7.80 (s, 1H)
(xv)	2-(fluoromethyl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (1.1 g, 26%)	2-(fluoromethyl)-6-methylpyridine (2.1 g, 16.8 mmol) and bis(pinacolato)diboron (8.5 g, 33.6 mmol) were heated at 60°C for 48 hours according to the typical procedure.	Mass spectroscopy : (ESI +ve) 252.1 [M+H] ⁺ at 0.13 mins, (method A).	(400MHz, DMSO) δ: 1.32 (s, 12H), 2.55 (s, 3H), 5.45 (d, J 47.2, 2H), 7.45 (s, 1H), 7.47 (s, 1H)
(xvi)	2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(fluoromethyl)pyridine (450mg, 24%)	2-chloro-6-(fluoromethyl)pyridine (1.0g, 6.9 mmol) and bis(pinacolato)diboron (3.5g, 13.8 mmol) were heated at 60°C for 2 hours according to the typical procedure.	TLC R_f : streak from baseline to 0.3 (EtOAc/isohehexane, 1:9)	(400MHz, DMSO) δ: 1.33 (s, 12H), 5.50(d, J 46.7, 2H), 7.57 (s, 1H), 7.65 (s, 1H)
(xvii)	2,6-bis-(fluoromethyl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-pyridine (1.6 g, 88%)	2,6-bis-fluoromethylpyridine (1.2g, 6.8 mmol) and bis(pinacolato)diboron (3.5g, 13.6 mmol) were heated at 65°C for 2 hours according to the typical procedure.	TLC R_f : streak from baseline to 0.3 (EtOAc/isohehexane, 1:9)	(400MHz, DMSO) δ: 1.22 (s, 12H), 5:50 (d, J 46.7, 4H), 7.51 (s, 2H)
xviii)	2-(difluoromethyl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (500 mg, 22%)	2-(difluoromethyl)-6-methylpyridine (1.2 g, 8.4 mmol) and bis(pinacolato)diboron (4.3 g, 16.8 mmol) were heated at 60°C for 2 hours according to the typical procedure.	TLC R_f : streak from baseline to 0.3 (EtOAc/isohehexane, 1:9)	(400MHz, DMSO) δ: 1.32 (s, 12H), 2.55 (s, 3H), 6.94 (t, J 55, 1H), 7.61 (s, 1H), 7.63 (s, 1H)

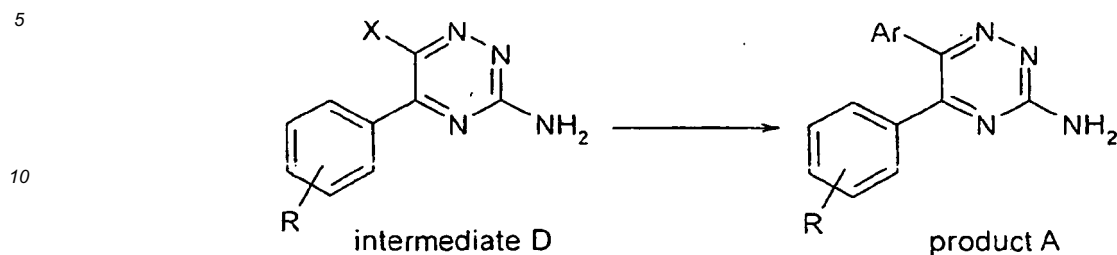
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(continued)

No.	Product (yield)	Prepared from	LCMS/TLC	NMR
(xix)	2-ethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (551 mg, 73%)	2-ethyl-6-(trifluoromethyl)pyridine (440 mg, 2.50 mmol) and bis(pinacolato)diboron (1.27 g, 5.00 mmol) according to the typical procedure.	Mass spectroscopy: m/z 302.1 (M+H) ⁺ (ES ⁺); at 0.93min (method A).	(400 MHz, DMSO) δ: 1.25 (t, 3H, J 8.0), 1.33 (s, 12H), 2.88 (q, 2H, J 8.0), 7.74 (s, 1H), 7.77 (s, 1H).
(xx)	2-cyclopropyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (473 mg, 67%)	2-cyclopropyl-6-(trifluoromethyl)pyridine (423 mg, 2.25 mmol) and bis(pinacolato)diboron (1.14 g, 4.50 mmol) according to the typical procedure.	Mass spectroscopy: m/z 314.1 (M+H) ⁺ (ES ⁺); at 1.02min (method A).	(400 MHz, DMSO) δ: 0.92 - 0.97 (m, 2H), 1.02 - 1.08 (m, 2H), 1.33 (s, 12H), 2.29-2.36 (m, 1H), 7.63 (s, 1H), 7.79 (s, 1H).
(xxi)	2-(azetidin-1-yl)-6-trifluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (68%)	2-(azetidin-1-yl)-6-(trifluoromethyl)pyridine (807 mg, 3.99 mmol) and bis(pinacolato)diboron (2.03 g, 7.98 mmol) were heated at 70°C for 2.0 hours according to the typical procedure.	Mass spectroscopy: m/z 329.0 (M+H) ⁺ (ES ⁺), at 1.00 min, 98% (method A).	(400 MHz, CDCl ₃) δ: 1.31 (s, 12H), 2.35 (quint., J 7.5, 2H), 4.03 (t, J 7.5Hz, 4H), 6.74 (s, 1H), 7.06 (s, 1 H).
(xxii)	2-methyl-6-(morpholin-4-yl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (1.09 g, 92%)	4-(6-methylpyridin-2-yl)morpholine (693 mg, 3.89 mmol) and bis(pinacolato)diboron (1.97 g, 7.78 mmol) were heated at 70°C for 4.0 hours according to the typical procedure	Mass spectroscopy: m/z 305.0 (M+H) ⁺ (ES ⁺), at 2.02 min, ~80% (method A). TLC R_f: 0.3 (DCM/MeOH, 1:9 (5% NH ₃))	
xxiii)	2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-trifluoromethylpyridine (2.6 g, 68%).	bis(pinacolato)diboron (1.99 g, 7.9 mmol) and 2-trifluoromethyl-6-chloropyridine (2.2 g, 12.1 mmol)	HPLC purity: 95.87 % (273 nm) Mass spectroscopy: (ESI +ve) 308.1 [M+H] ⁺ .	(400 MHz, DMSO) δ: 1.31 (s, 12 H), 7.88 (s, 1H), 7.89 (s, 1H).

Example 1

[0248]



[0249] Compounds of Example 1 that are marked with an asterisk are Reference Compounds.

General Procedure for the Preparation of 5,6-Biaryl-3-amino-1,2,4-triazines

[0250] A solution of intermediate D, a 6-halo-5-aryl-1,2,4-triazin-3-amine derivative, (0.80 mmol) in dioxane (2 mL) is treated with an arylboronic acid (0.92 mmol) and K_2CO_3 (0.23 g, 1.67 mmol). The resulting mixture is diluted with water (1.0 mL), degassed, treated with tetrakis triphenylphosphine palladium (0.05 g, 0.04 mmol) and stirred at 150 °C for 2.25 hrs with monitoring by TLC (hexane/ethyl acetate, 5:5). Upon completion of the reaction, the mixture is diluted with water (30 mL) and extracted with ethyl acetate (3 x 20 mL); the combined organic extracts are then dried over Na_2SO_4 and concentrated under reduced pressure. The crude compound, product A, is purified by gradient flash chromatography or preparative HPLC.

* (i) 5,6-Diphenyl-1,2,4-triazin-3-amine

[0251] 5,6-Diphenyl-1,2,4-triazin-3-amine (86.0 mg, 42%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.8 mmol) and phenyl boronic acid (0.11 g, 0.92 mmol) according to the general procedure of Example 1.

HPLC purity: 99.6% (261 nm)

Mass spectroscopy: (ESI +ve) 249.0 $[M+H]^+$. 1H NMR: (400 MHz, $CDCl_3$) δ : 5.49 (s, 2H), 7.30-7.37 (m, 5H), 7.40-7.43 (m, 3H), 7.45-7.46 (m, 1 H), 7.47-7.51 (m, 1 H).

* (ii) 6-(3-Methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0252] 6-(3-Methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (106 mg, 47%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.8 mmol) and 3-methoxyphenyl boronic acid (0.137 g, 0.90 mmol) according to the general procedure of Example 1.

HPLC purity: 99.58% (223 nm)

Mass spectroscopy: (ESI +ve) 278.9 $[M+H]^+$. 1H NMR: (400 MHz, $CDCl_3$) δ : 3.72 (s, 3H), 5.47 (s, 2H), 6.88-6.94 (m, 2H), 7.03 (m, 1H), 7.20 (t, 1H), 7.33 (m, 2H), 7.40 (m, 1 H), 7.44 (m, 2H).

* (iii) 6-(4-Fluorophenyl)-5-phenyl-1,2,4-triazin-3-amine

[0253] 6-(4-Fluorophenyl)-5-phenyl-1,2,4-triazin-3-amine (99 mg, 46%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and 4-fluorophenylboronic acid (0.112 g, 0.80 mmol) according to the general procedure of Example 1.

HPLC purity: 99.93% (261 nm)

Mass spectroscopy: (ESI +ve) 267.0 $[M+H]^+$. 1H NMR: (400 MHz, $CDCl_3$) δ : 5.49 (s, 2H), 6.99 (m, 2H), 7.31-7.37 (m, 2H), 7.37-7.46 (m, 5H).

[0254] * (iv) 6-(5-Chloro-2-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0255] 6-(5-Chloro-2-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (57 mg, 22%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and 5-chloro-2-methoxyphenylboronic acid (0.15 g, 0.80 mmol) according to the general procedure of Example 1.

HPLC purity: 98.73% (229 nm)

Mass spectroscopy: (ESI +ve) 312.9 $[M]^+$, 1H NMR: (400 MHz, $CDCl_3$) δ : 3.16 (s, 3H), 5.46 (s, 2H), 6.62 (d, 1H), 7.26-7.33 (m, 3H), 7.37 (m, 1H), 7.44 (m, 2H),

7.66 (d, 1H).

* (v) 6-(2-Chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine

5 **[0256]** 6-(2-Chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine (103 mg, 45%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and 2-chlorophenylboronic acid (0.125 g, 0.80 mmol) according to the general procedure of Example 1.

HPLC purity: 99.27% (245 nm)

Mass spectroscopy: (ESI +ve) 282.9 [M]⁺.

10 **¹H NMR:** (400 MHz, CDCl₃) δ: 5.62 (s, 2H), 7.26-7.32 (m, 2H), 7.33-7.36 (m, 4H) 7.43-7.45 (m, 2H), 7.52 (m, 1H).

* (vi) 6-(3-Chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine

15 **[0257]** 6-(3-Chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine (110 mg, 49%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and 3-chlorophenylboronic acid (0.12 g, 0.80 mmol) according to the general procedure of Example 1.

HPLC purity: 93.7% (261 nm)

Mass spectroscopy: (ESI +ve) 282.9 [M]⁺

20 **¹H NMR:** (400 MHz, CDCl₃) δ: 5.50 (s, 2H), 7.18-7.26 (m, 2H), 7.30-7.36 (m, 3H) 7.42-7.47 (m, 3H), 7.53 (s, 1H).

* (vii) 6-(4-Chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine

25 **[0258]** 6-(4-Chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine (125 mg, 56%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and 4-chlorophenylboronic acid (0.12 g, 0.80 mmol) according to the general procedure of Example 1.

HPLC purity: 97.7% (264 nm)

Mass spectroscopy: (ESI +ve) 282.9 [M]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 5.46 (s, 2H), 7.28-7.33 (m, 2H), 7.35-7.38 (m, 5H) 7.42-7.46 (m, 2H).

30 * (viii) 6-(Furan-2-yl)-5-phenyl-1,2,4-triazin-3-amine

[0259] 6-(Furan-2-yl)-5-phenyl-1,2,4-triazin-3-amine (100 mg, 35%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.3 g, 1.19 mmol) and 2-furanboronic acid (0.16 g, 1.428 mmol) according to the general procedure of Example 1.

35 **HPLC purity:** 95.03 % (290 nm)

Mass spectroscopy: (ESI +ve) 239.0 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 5.58 (s, 2H), 6.43 (m, 1H), 6.55 (m, 1H) 7.40-7.47 (m, 3H), 7.47-7.59 (m, 3H).

* (ix) 5-Phenyl-6-[3-(trifluoromethyl)phenyl]-1,2,4-triazin-3-amine

40 **[0260]** 5-Phenyl-6-[3-(trifluoromethyl)phenyl]-1,2,4-triazin-3-amine (120 mg, 31%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 3-trifluoromethylphenylboronic acid (0.25 g, 1.30 mmol) according to the general procedure of Example 1.

HPLC purity: 99.4 % (262 nm)

45 **Mass spectroscopy:** (ESI +ve) 316.9 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ: 7.36 (m, 4H), 7.42 (m, 2H), 7.51 (s, 2H) 7.56 (m, 1H), 7.63 (m, 3H).

* (x) 6-[3-Fluoro-5-(trifluoromethyl)phenyl]-5-phenyl-1,2,4-triazin-3-amine

50 **[0261]** 6-[3-Fluoro-5-(trifluoromethyl)phenyl]-5-phenyl-1,2,4-triazin-3-amine (149 mg, 37%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 3-fluoro-5-(trifluoromethyl)phenylboronic acid (0.27 g, 1.30 mmol) according to the general procedure of Example 1.

HPLC purity: 94.3 % (265 nm)

Mass spectroscopy: (ESI +ve) 335.0 [M+H]⁺

55 **¹H NMR:** (400 MHz, DMSO) δ: 7.36 (m, 4H), 7.45 (m, 3H), 7.61 (s, 2H) 7.64 (d, 1 H).

* (xi) 5-Phenyl-6-(3,4,5-trifluorophenyl)-1,2,4-triazin-3-amine

[0262] 5-Phenyl-6-(3,4,5-trifluorophenyl)-1,2,4-triazin-3-amine (131 mg, 37%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 3,4,5-trifluorophenylboronic acid (0.23 g, 1.30 mmol) according to the general procedure of Example 1.

HPLC purity: 99.6 % (262 nm)

Mass spectroscopy: (ESI +ve) 303.0 [M+H]⁺, (ESI -ve) 301.2 [M-H]⁻

¹H NMR: (400 MHz, DMSO) δ : 7.24 (t, 2H), 7.38 (m, 4H), 7.44 (m, 1H), 7.56 (s, 2H).

* (xii) 6-(3,5-Difluorophenyl)-5-phenyl-1,2,4-triazin-3-amine

[0263] 6-(3,5-Difluorophenyl)-5-phenyl-1,2,4-triazin-3-amine (160 mg, 47%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 3,5-difluorophenylboronic acid (0.20 g, 1.30 mmol) according to the general procedure of Example 1.

HPLC purity: 99.3 % (262 nm)

Mass spectroscopy: (ESI +ve) 284.9 [M+H]⁺, (ESI -ve) 283.1 [M-H]⁻

¹H NMR: (400 MHz, DMSO) δ : 6.99 (d, 2H), 7.12 (t, 1 H), 7.40 (m, 5H) 7.56 (s, 2H).

* (xiii) 6-(3,5-Dichlorophenyl)-5-phenyl-1,2,4-triazin-3-amine

[0264] 6-(3,5-Dichlorophenyl)-5-phenyl-1,2,4-triazin-3-amine (130 mg, 34%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 3,5-dichlorophenylboronic acid (0.42 g, 2.19 mmol) according to the general procedure of Example 1.

HPLC purity: 90% (245 nm)

Mass spectroscopy: (ESI +ve) 316.9 [M+H]⁺, (ESI -ve) 315.1 [M-H]⁻

¹H NMR: (400 MHz, CDCl₃) δ : 5.55 (s, 2H), 7.33 (m, 3H), 7.38 (m, 2H) 7.49 (m, 3H).

* (xiv) 6-(5-Chloropyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine

[0265] 6-(5-Chloropyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine (35 mg, 10%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 5-chloropyridine-3-ylboronic acid (0.20 g, 1.30 mmol) according to the general procedure of Example 1.

HPLC purity: 98.9% (262 nm)

Mass spectroscopy: (ESI +ve) 283.9 [M+H]⁺.

¹H NMR: (400 MHz, DMSO) δ : 7.38 (m, 4H), 7.45 (m, 1H), 7.61 (s, 2H), 7.87 (t, 1H), 8.35 (d, 1H), 8.55 (d, 1H).

* (xv) 6-(3-Chloro-4-fluorophenyl)-5-phenyl-1,2,4-triazin-3-amine

[0266] 6-(3-Chloro-4-fluorophenyl)-5-phenyl-1,2,4-triazin-3-amine (140 mg, 29%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.40 g, 1.59 mmol) and 3-chloro-4-fluorophenylboronic acid (0.33 g, 1.91 mmol) according to the general procedure of Example 1.

HPLC purity: 93.7% (261 nm)

Mass spectroscopy: (ESI +ve) 300.9 [M+H]⁺.

¹H NMR: (400 MHz, CDCl₃) δ : 5.49 (s, 2H), 7.04 (t, 1H), 7.18 (m, 1H), 7.37 (m, 2H), 7.45 (m, 3H), 7.60 (dd, 1H).

* (xvi) 6-(3-Chloro-5-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0267] 6-(3-Chloro-5-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (36 mg, 9%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 3-chloro-5-methoxyphenylboronic acid (0.27 g, 1.43 mmol) according to the general procedure of Example 1.

HPLC purity: 99% (254 nm)

Mass spectroscopy: (ESI +ve) 312.9 [M+H]⁺.

¹H NMR: (400 MHz, DMSO) δ : 3.63 (s, 3H), 6.78 (m, 1 H), 6.94 (m, 2H), 7.34-7.45 (m, 5H), 7.49 (bs, 2H).

* (xvii) 6-(3-Fluoro-5-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0268] 6-(3-Fluoro-5-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (193 mg, 32%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.50 g, 1.99 mmol) and 3-fluoro-5-methoxy phenylboronic acid (0.37 g, 2.19 mmol) ac-

cording to the general procedure of Example 1.

HPLC purity: 99.6% (263 nm)

Mass spectroscopy: (ESI +ve) 296.9 [M+H]⁺.

¹H NMR: (400 MHz, CDCl₃) δ: 3.69 (s, 3H), 5.56 (s, 2H), 6.59 (d, 1H) 6.70 (d, 1H), 6.78 (s, 1 H), 7.35 (m, 2H), 7.45 (m, 3H).

* (xviii) 6-(1H-Indol-6-yl)-5-phenyl-1,2,4-triazin-3-amine

[0269] 6-(1H-Indol-6-yl)-5-phenyl-1,2,4-triazin-3-amine (107 mg, 23%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.4 g, 1.59 mmol) and indol-6-boronic acid (0.256 g, 1.59 mmol) according to the general procedure of Example 1.

HPLC purity: 97.75% (222 nm)

Mass spectroscopy: (ESI +ve) 288.0 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ: 6.38 (m, 1H), 6.89 (dd, 1 H), 7.26-7.40 (m, 3H), 7.42-7.62 (m, 5H), 11.12 (s, 1H).

* (xix) 6-(3-Bromophenyl)-5-phenyl-1,2,4-triazin-3-amine

[0270] 6-(3-Bromophenyl)-5-phenyl-1,2,4-triazin-3-amine (218 mg, 52%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.4 g, 1.59 mmol) and 3-bromophenylboronic acid (0.32 g, 1.59 mmol) according to the general procedure of Example 1.

HPLC purity: 95.65% (262 nm)

Mass spectroscopy: (ESI +ve) 326.9 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 5.61 (s, 2H), 7.15 (t, 1H), 7.24 (m, 1H), 7.35 (m, 2H), 7.47 (m, 4H), 7.69 (t, 1 H).

* (xx) 6-(3,4-Dichlorophenyl)-5-phenyl-1,2,4-triazin-3-amine

[0271] 6-(3,4-Dichlorophenyl)-5-phenyl-1,2,4-triazin-3-amine (52 mg, 54%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 3,4-dichlorophenylboronic acid (65.5 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 99.2% (254nm)

Mass spectroscopy: (ESI +ve) 317.1/319.1/321.1 (M+H)⁺

¹H NMR: (400 MHz, d6-DMSO) δ: 7.24 (dd, 1H), 7.35-7.47 (m, 5H), 7.53 (bs, 2H), 7.57 (m, 1 H), 7.63 (d, 1 H).

* (xxi) 6-(3-Fluorophenyl)-5-phenyl-1,2,4-triazin-3-amine

[0272] 6-(3-Fluorophenyl)-5-phenyl-1,2,4-triazin-3-amine (49 mg, 62%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 3-fluorophenylboronic acid (48.1 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 100% (254nm)

Mass spectroscopy: (ESI +ve) 267.1 (M+H)⁺

¹H NMR: (400 MHz, d6-DMSO) δ: 7.10-7.20 (m, 3H), 7.31-7.44 (m, 6H), 7.45 (bs, 2H).

* (xxii) 6-(1,3-Benzodioxol-5-yl)-5-phenyl-1,2,4-triazin-3-amine

[0273] 6-(1,3-Benzodioxol-5-yl)-5-phenyl-1,2,4-triazin-3-amine (54 mg, 62%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and benzo[d][1,3]dioxol-5-ylboronic acid (57.0 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 100% (254nm)

Mass spectroscopy: 293.2 (M+H)⁺

¹H NMR: (400 MHz, d6-DMSO) δ: 6.05 (s, 2H), 6.52 (dd, 1H), 6.83 (m, 1 H), 6.87 (m, 1H), 7.32 (bs, 2H), 7.35-7.43 (m, 5H).

* (xxiii) 3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)benzonitrile

[0274] 3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)benzonitrile (20 mg, 25%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 3-cyanophenylboronic acid (50.5 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 96.0% (254nm)

Mass spectroscopy: (ESI +ve) 274.2 (M+H)⁺

¹H NMR: (400 MHz, d6-DMSO) δ: 7.30-7.35 (m, 4H), 7.52 (m, 1 H), 7.52 (m, 1H), 7.54 (bs, 2H), 7.63 (m, 1 H), 7.82 (m, 2H).

* (xxiv) 6-(3,5-Dimethoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0275] 6-(3,5-Dimethoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (55 mg, 60%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 3,5-dimethoxyphenylboronic acid (62.5 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 100% (254nm)

Mass spectroscopy: (ESI +ve) 309.2 (M+H)⁺

¹H NMR: (400 MHz, d₆-DMSO) δ: 3.70 (s, 6H), 6.54 (m, 3H), 7.42-7.54 (m, 7H).

* (xxv) 6-(3,5-Dimethylphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0276] 6-(3,5-Dimethylphenyl)-5-phenyl-1,2,4-triazin-3-amine (54 mg, 65%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 3,5-dimethylphenylboronic acid (51.5 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 100% (254nm)

Mass spectroscopy: (ESI +ve) 277.2 (M+H)⁺

¹H NMR: (400 MHz, d₆-DMSO) δ: 2.06 (s, 6H), 6.82 (m, 3H), 7.18-7.27 (m, 7H).

* (xxvi) 6-(3,4-Dimethylphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0277] 6-(3,4-Dimethylphenyl)-5-phenyl-1,2,4-triazin-3-amine (55 mg, 67%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 3,4-dimethylphenylboronic acid (51.5 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 100% (254nm)

Mass spectroscopy: (ESI +ve) 277.2 (M+H)⁺ **¹H NMR:** (400 MHz, d₆-DMSO) δ: 2.15 (s, 3H), 2.17 (s, 3H), 6.88 (m, 1H), 7.02 (m, 1H), 7.23 (m, 1H), 7.32 (bs, 2H), 7.34 (m, 2H), 7.87-7.42 (m, 3H).

* (xxvii) 6-[3-(Dimethylamino)phenyl]-5-phenyl-1,2,4-triazin-3-amine

[0278] 6-[3-(Dimethylamino)phenyl]-5-phenyl-1,2,4-triazin-3-amine (53 mg, 60%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 3-(dimethylamino)phenylboronic acid (56.7 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 98.3% (254nm)

Mass spectroscopy: (ESI +ve) 292.2 (M+H)⁺

¹H NMR: (400 MHz, d₆-DMSO) δ: 2.77 (s, 6H), 6.58 (m, 1H), 6.67 (m, 2H), 7.09 (m, 1H), 7.32 (bs, 2H), 7.34 (m, 2H), 7.40 (m, 3H).

* (xxviii) *N*-[3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)phenyl]acetamide

[0279] *N*-[3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)phenyl]acetamide (59 mg, 62%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 3-acetamidophenylboronic acid (61.5 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 100% (254nm)

Mass spectroscopy: (ESI +ve) 306.2 (M+H)⁺

¹H NMR: (400 MHz, d₆-DMSO) δ: 1.95 (s, 3H), 6.70 (m, 1H), 7.07 (m, 1H), 7.25-7.35 (m, 6H), 7.52 (m, 2H), 7.64 (m, 1H), 9.89 (s, 1H).

* (xxix) *N*-[3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)phenyl]methanesulfonamide

[0280] *N*-[3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)phenyl]methanesulfonamide (42 mg, 41%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and *N*-(3-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)methanesulfonamide (102 mg, 0.344 mmol) according to the general procedure of Example 1.

HPLC purity: 100% (254nm)

Mass spectroscopy: (ESI +ve) 342.2 (M+H)⁺

¹H NMR: (400 MHz, d₆-DMSO) δ: 2.79 (s, 3H), 7.02 (m, 1H), 7.36 (m, 1H), 7.26 (m, 2H), 7.35-7.48 (m, 7H), 9.78 (s, 1H).

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* (xxx) 6-(3-Chlorophenyl)-5-(2,4-difluorophenyl)-1,2,4-triazin-3-amine

[0281] 6-(3-Chlorophenyl)-5-(2,4-difluorophenyl)-1,2,4-triazin-3-amine (23 mg, 15%) was prepared from 6-bromo-5-(2,4-difluorophenyl)-1,2,4-triazin-3-amine (0.13 g, 0.40 mmol) and 3-chlorophenylboronic acid (0.07g, 0.40 mmol) according to the general procedure of Example 1.

HPLC purity: 98.7% (260 nm)

Mass spectroscopy: (ESI +ve) 318.9 [M+H]⁺, 317.1 [M-H]⁻.

¹H NMR: (400 MHz, CDCl₃) δ: 5.64 (s, 2H), 6.75 (m, 1H), 7.01 (m, 1H), 7.20 (m, 2H), 7.32 (m, 1H), 7.48 (s, 1H), 7.54 (m, 1H).

* (xxxi) 6-(3-Chlorophenyl)-5-(3-methoxyphenyl)-1,2,4-triazin-3-amine

[0282] 6-(3-Chlorophenyl)-5-(3-methoxyphenyl)-1,2,4-triazin-3-amine (18 mg 9%) was prepared from 6-bromo-5-(3-methoxyphenyl)-1,2,4-triazin-3-amine (0.18 g, 0.60 mmol) and 3-chlorophenylboronic acid (0.10 g, 0.60 mmol) according to the general procedure of Example 1.

HPLC purity: 88% (258 nm)

Mass spectroscopy: (ESI +ve) 313.0 [M+H]⁺, 311.1 [M-H]⁻.

¹H NMR: (400 MHz, CDCl₃) δ: 3.72 (s, 3H), 6.53 (s, 2H), 7.04 (m, 3H), 7.23-7.30 (m, 3H), 7.37 (d, 1H), 7.49 (s, 1H).

* (xxxii) 6-(3-Chlorophenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine

[0283] 6-(3-Chlorophenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (65.0 mg, 19%) was prepared from 6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (0.30 g, 1.11 mmol) and 3-chlorophenylboronic acid (0.19 g, 1.23 mmol) according to the general procedure of Example 1.

HPLC purity: 98% (261 nm)

Mass spectroscopy: (ESI +ve) 300.9 [M+H]⁺.

¹H NMR: (400 MHz, CDCl₃) δ: 5.47 (s, 2H), 7.03 (m, 2H), 7.19-7.26 (m, 3H), 7.33 (m, 1 H), 7.47 (m, 2H), 7.53 (m, 1H).

* (xxxiii) 6-(2-Methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0284] 6-(2-Methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (108 mg, 48%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and 2-methoxyphenyl boronic acid (0.137 g, 0.90 mmol) according to the general procedure of Example 1.

HPLC purity: 99.28% (223 nm)

Mass spectroscopy: (ESI +ve) 278.9 [M+H]⁺.

¹H NMR: (400 MHz, CDCl₃) δ: 3.20 (s, 3H), 5.49 (s, 2H), 6.70 (t, 1H) 7.10 (m, 2H), 7.26 (m, 1H), 7.32-7.39 (m, 2H), 7.43 (m, 2H), 7.64 (dd, 1H).

* (xxxiv) 6-(3-trifluoromethoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0285] 6-(3-trifluoromethoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (170 mg, 25%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.50 g, 1.99 mmol) and 3-(trifluoromethoxy)phenyl boronic acid (0.44 g, 2.13 mmol) according to the general procedure of Example 1.

HPLC purity: 99% (262 nm)

Mass spectroscopy: (ESI +ve) 332.9 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 5.46 (s, 2H), 7.19 (m, 1H), 7.25 (m, 1H) 7.36 (m, 3H), 7.43 (t, 4H).

* (xxxv) 6-(1-benzofuran-5-yl)-5-phenyl-1,2,4-triazin-3-amine

[0286] 6-(1-benzofuran-5-yl)-5-phenyl-1,2,4-triazin-3-amine (225 mg, 47%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.50 g, 1.99 mmol) and benzofuran-5 boronic acid (0.32 g, 1.99 mmol) according to the general procedure of Example 1.

HPLC purity: 99.61 % (245 nm)

Mass spectroscopy: (ESI +ve) 288.9 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ: 6.92 (m, 1H), 7.20 (m, 1H), 7.27 (m, 2H), 7.36 (m, 5H), 7.52 (d, 1 H), 7.66 (d, 1 H), 7.98 (d, 1H).

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* (xxxvi) 5-phenyl-6-[3-(propan-2-yl)phenyl]-1,2,4-triazin-3-amine

[0287] 5-phenyl-6-[3-(propan-2-yl)phenyl]-1,2,4-triazin-3-amine (110 mg, 33%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.3 g, 1.19 mmol) and 3-isopropyl phenyl boronic acid (0.215 g, 1.31 mmol) according to the general procedure of Example 1.

HPLC purity: 99.78 % (262 nm)

Mass spectroscopy: (ESI +ve) 291.0 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 1.09 (d, 6H), 2.79 (m, 1 H), 5.48 (bs, 2H), 7.19 (m, 2H), 7.31 (m, 4H), 7.44 (m, 3H).

* (xxxvii)-6-(3,5-dichlorophenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine

[0288] 6-(3,5-dichlorophenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (0.11 g, 17.6%) was prepared from 6-Bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (0.5 g, 1.18 mmol) and 3,5-dichloro phenylboronic acid (0.47 mg, 2.4 mmol) according to the general procedure of Example 1.

HPLC purity: 97.46% (225 nm)

Mass spectroscopy: (ESI +ve) 334.9 [M]⁺.

¹H NMR: (400 MHz, DMSO) δ: 7.24 (m, 2H), 7.34 (m, 2H), 7.45 (m, 2H), 7.58 (m, 3H).

* (xxxviii) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-(propan-2-yloxy)phenol

[0289] 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-(propan-2-yloxy)phenol (0.450 g, 18 %) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (1.9 g, 7.52 mmol) and 3-isopropoxy-4-hydroxyphenylboronic acid pinacol ester (2.5 g, 9.02 mmol) according to the general procedure of Example 1.

HPLC purity: 94.14% (290 nm)

Mass spectroscopy: (ESI +ve) 323.1 [M+H]⁺ (ESI -ve) 321.1 [M+H]⁺.

¹H NMR: (400 MHz, DMSO) δ: 1.04 (d, 6H), 4.20 (m, 1H), 6.68 (m, 1H), 6.70 (m, 1H), 6.84 (m, 1H), 7.26 (bs, 2H), 7.32-7.44 (m, 5H), 9.01 (s, 1H).

[0290] The compounds in the following table were prepared using the general procedure outlined for Example 1, by reacting the corresponding starting materials at 140°C for 1 hour.

No.	Product (yield)	Prepared From	LCMS	NMR
(xxix) *	6-(3,5-bis(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine (50.2 mg, 0.131 mmol, 36.4 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3,5-bis(trifluoromethyl)phenylboronic acid (106 mg, 0.412 mmol)	Mass spectroscopy: m/z 385.3 (M+H) ⁺ (ES ⁺); 383.5 (M-H) ⁻ (ES ⁻), at 4.89 min, 100% (method B).	(400 MHz, DMSO) δ: 7.35 - 7.43 (m, 4H), 7.44 - 7.50 (m, 1H), 7.68 (s, 2H), 7.94 (s, 2H), 8.06 (s, 1H).
(xi) *	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-methoxyphenol (42.5 mg, 0.139 mmol, 38.7 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and -methoxy-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenol (103 mg, 0.412 mmol)	Mass spectroscopy: m/z 295.2 (M+H) ⁺ (ES ⁺); 293.4 (M-H) ⁻ (ES ⁻), at 2.70 min, 96.0% (method B).	(400 MHz, DMSO) δ: 3.55 (s, 3H), 6.65 - 6.76 (m, 2H), 6.85 (d, 1H), 7.28 (s, 2H), 7.33 - 7.45 (m, 5H), 9.18 (s, 1H).
(xii) *	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2,6-dimethylphenol (41.3 mg, 0.141 mmol, 39.4 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenol (102 mg, 0.412 mmol)	Mass spectroscopy: m/z 293.2 (M+H) ⁺ (ES ⁺); 251.4 (M-H) ⁻ (ES ⁻), at 3.57 min, 100% (method B).	(400 MHz, DMSO) δ: 2.06 (s, 6H), 6.87 (s, 2H), 7.31 - 7.64 (m, 7H), 8.46 (s, 1H).
(xiii) *	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-chlorophenol (26.8 mg, 0.085 mmol, 23.78 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-chloro-4-hydroxyphenylboronic acid (64.9 mg, 0.376 mmol)	Mass spectroscopy: m/z (Cl) 299.2/301.2 (M+H) ⁺ (ES ⁺); 297.4/299.4 (M-H) ⁻ (ES ⁻), at 2.15 min, 97.1% (method B).	(400 MHz, DMSO) δ: 6.87 (d, J 8.4, 1H), 7.03 (dd, J 8.4, 2.2, 1H), 7.31 (d, J 2.2, 1H), 7.33 - 7.47 (m, 7H), 10.38 (s, 1H).
(xliii)	6-(2-chloropyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (22.5 mg, 0.079 mmol, 22.12%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-chloropyridin-4-ylboronic acid (59.2 mg, 0.376 mmol)	Mass spectroscopy: m/z (Cl) 284.1/286.1 (M+H) ⁺ (ES ⁺); 282.3/284.3 (M-H) ⁻ (ES ⁻), at 3.55 min, 100% (method B).	(400 MHz, DMSO) δ: 7.28 (dd, J 5.2, 1.5, 1H), 7.38 - 7.53 (m, 6H), 7.74 (s, 2H), 8.33 (dd, J 5.2, 0.6, 1H).
(xliv) *	6-(3-(methylsulfonyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine (78.8 mg, 0.241 mmol, 67.4 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-(methylsulfonyl)phenylboronic acid (82 mg, 0.412 mmol)	Mass spectroscopy: m/z 327.2 (M+H) ⁺ (ES ⁺); 325.4 (M-H) ⁻ (ES ⁻), at 3.12 min, 100% (method B).	(400 MHz, DMSO) δ: 3.10 (s, 3H), 7.33-7.48 (m, 5H), 7.50-7.68 (m, 4H), 7.83-7.91 (m, 2H).
(xlv) *	6-(3,5-dichloro-4-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (52 mg, 0.147 mmol, 41.1 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3,5-dichloro-4-methoxyphenylboronic acid (83 mg, 0.376 mmol)	Mass spectroscopy: m/z (2Cl) 347.2/349.2/351.2 (M+H) ⁺ (ES ⁺); 345.3/347.3/349.4 (M-H) ⁻ (ES ⁻), at 4.57 min, 91.0% (method B).	(400 MHz, DMSO) δ: 3.83 (s, 3H), 7.37-7.50 (m, 7H), 7.55 (s, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xvi) *	6-(4-methoxy-3-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine (53.4 mg, 0.154 mmol, 51.6 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 4-methoxy-3-(trifluoromethyl)phenylboronic acid (76 mg, 0.344 mmol)	Mass spectroscopy: m/z 347.2 (M+H) ⁺ (ES ⁺); 345.4 (ES ⁺), at 4.25 min, 100% (method B).	(400 MHz, DMSO) δ: 3.88 (s, 3H), 7.21 (d, J 8.6, 1H), 7.33-(M-H) ⁻ 7.50 (m, 7H), 7.51-7.59 (m, 2H).
(xlvii) *	6-(3-chloro-5-(dimethylamino)phenyl)-5-phenyl-1,2,4-triazin-3-amine (68.3 mg, 0.204 mmol, 57.0 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-chloro-N,N-dimethyl-5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)aniline (106 mg, 0.376 mmol)	Mass spectroscopy: m/z (CI) 326.3/328.2 (M+H) ⁺ (ES ⁺); 324.4/326.4 (M-H) ⁻ (ES ⁻), at 4.53 min, 100% (method B).	(400 MHz, DMSO) δ: 2.75 (s, 6H), 6.47-6.53 (m, 1H), 6.61-6.68 (m, 2H), 7.30-7.54 (m, 7H).
(xlviii) *	3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-(trifluoromethyl)benz onitrile (47.5 mg, 0.137 mmol, 38.2 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-5-(trifluoromethyl)benz onitrile (122 mg, 0.412 mmol)	Mass spectroscopy: m/z 342.9 (M+H) ⁺ (ES ⁺); 341.0 (M-H) ⁻ (ES ⁻), at 4.25 min, 98.4% (method B).	(400 MHz, DMSO) δ: 7.36-7.42 (m, 4H), 7.43-7.51 (m, 1H), 7.69 (s, 2H), 7.90 (s, 1H), 8.09 (s, 1H), 8.31 (s, 1H).
(xlix) *	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2,6-dimethylbenz onitrile (72.4 mg, 0.233 mmol, 65.0 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benz onitrile (106 mg, 0.412 mmol)	Mass spectroscopy: m/z 302.2 (M+H) ⁺ (ES ⁺); 300.4 (M-H) ⁻ (ES ⁻), at 4.14 min, 100% (method B).	(400 MHz, DMSO) δ: 2.37 (s, 6H), 7.22 (s, 2H), 7.35-7.42 (m, 4H), 7.43-7.49 (m, 1H), 7.57 (s, 2H).
(l) *	6-(3-chloro-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine (42.5 mg, 0.117 mmol, 32.6 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (115 mg, 0.376 mmol)	Mass spectroscopy: m/z 351.9 (M+H) ⁺ (ES ⁺); 350.0 (M-H) ⁻ (ES ⁻), at 4.80 min, 96.4% (method B).	(400 MHz, DMSO) δ: 7.35-7.43 (m, 4H), 7.44-7.49 (m, 1H), 7.55 (s, 1H), 7.63 (s, 2H), 7.72 (s, 1H), 7.82 (s, 1H).
(li) *	6-(3-chloro-5-methylphenyl)-5-phenyl-1,2,4-triazin-3-amine (65.1 mg, 0.219 mmol, 61.2 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-chloro-5-methylphenylboronic acid (64.1 mg, 0.376 mmol)	Mass spectroscopy: m/z (CI) 297.1/299.3 (M+H) ⁺ (ES ⁺); 295.3/297.3 (M-H) ⁻ (ES ⁻), at 4.55 min, 100% (method B).	(400 MHz, DMSO) δ: 2.24 (s, 3H), 7.07-7.12 (m, 1H), 7.13-7.17 (m, 1H), 7.21-7.25 (m, 1H), 7.33-7.57 (m, 7H).
(lii) *	6-(3-(methylthio)-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine (66 mg, 0.181 mmol, 50.5 %)	from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-(methylthio)-5-(trifluoromethyl)phenylboronic acid (97 mg, 0.412 mmol)	Mass spectroscopy: m/z 363.2 (M+H) ⁺ (ES ⁺); 361.4 (M-H) ⁻ (ES ⁻), at 4.75 min, 99.4% (method B).	(400 MHz, DMSO) δ: 2.33 (s, 3H), 7.35-7.43 (m, 6H), 7.43-7.47 (m, 1H), 7.57 (s, 2H), 7.49 (s, 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(lii) *	6-(3-methoxy-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine (62.9 mg, 0.179 mmol, 49.9 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-methoxy-5-(trifluoromethyl)phenylboronic acid (91 mg, 0.412 mmol)	Mass spectroscopy: m/z 347.2 (M+H) ⁺ (ES ⁺); 345.4 (M-H) ⁻ (ES ⁻), at 4.52 min, 99.5% (method B).	(400 MHz, DMSO) δ: 3.71 (s, 3H), 7.14-7.22 (m, 3H), 7.35-7.42 (m, 4H), 7.42-7.47 (m, 1H), 7.55 (s, 2H).
(liv) *	6-(3-ethoxy-5-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine (76.4 mg, 0.211 mmol, 58.8 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-ethoxy-5-(trifluoromethyl)phenylboronic acid (96 mg, 0.412 mmol)	Mass spectroscopy: m/z 361.2 (M+H) ⁺ (ES ⁺); 359.5 (M-H) ⁻ (ES ⁻), at 4.74 min, 99.4% (method B).	(400 MHz, DMSO) δ: 1.23 (t, J 7.0, 3H), 3.97 (q, J 7.0, 2H), 7.12 - 7.15 (m, 1H), 7.15 - 7.17 (m, 1H), 7.18 - 7.21 (m, 1H), 7.34 - 7.48 (m, 5H), 7.54 (s, 2H).
(lv) *	6-(3-tert-butyl-5-methylphenyl)-5-phenyl-1,2,4-triazin-3-amine (80 mg, 0.249 mmol, 69.5 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and with B-tert-butyl 5-methylphenylboronic acid (79 mg, 0.412 mmol)	Mass spectroscopy: m/z 319.5 (M+H) ⁺ (ES ⁺); 317.5 (M-H) ⁻ (ES ⁻), at 4.99 min, 99.1% (method B).	(400 MHz, DMSO) δ: 1.03 (s, 9H), 2.31 (s, 3H), 6.80 - 6.85 (m, 1H), 7.11 - 7.15 (m, 1H), 7.24 - 7.28 (m, 1H), 7.30 - 7.44 (m, 7H).
(lvi)	6-(2-chloro-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (52.5 mg, 0.170 mmol, 47.3 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-chloro-6-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (100 mg, 0.394 mmol)	Mass spectroscopy: m/z (CI) 298.1/300.1 (M+H) ⁺ (ES ⁺); 296.3/298.3 (M-H) ⁻ (ES ⁻), at 3.73 min, 99.6% (method B).	(400 MHz, DMSO) δ: 2.39 (s, 3H), 7.08-7.13 (m, 1H), 7.24-7.30 (m, 1H), 7.39-7.45 (m, 4H), 7.46-7.53 (m, 1H), 7.71 (s, 2H).
(lvii) *	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-chlorobenzonitrile. (29 mg, 0.092 mmol, 25.7 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-chloro-4-cyanophenylboronic acid (71.5 mg, 0.394 mmol)	Mass spectroscopy: m/z (CI) 308.1/310.1 (M+H) ⁺ (ES ⁺); 306.3/308.3 (M-H) ⁻ (ES ⁻), at 4.02 min, 97.9% (method B).	(400 MHz, DMSO) δ: 7.36 - 7.44 (m, 5H), 7.44 - 7.50 (m, 1H), 7.69 (s, 2H), 7.73 (d, J 1.3, 1H), 7.91 (d, J 8.2, 1H).
(lviii) *	6-(3-ethylphenyl)-5-phenyl-1,2,4-triazin-3-amine (70 mg, 0.252 mmol, 70.3 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-ethylphenylboronic acid (61.8 mg, 0.412 mmol)	Mass spectroscopy: m/z 277.2 (M+H) ⁺ (ES ⁺); 275.4 (M-H) ⁻ (ES ⁻), at 4.49 min, 99.5% (method B).	(400 MHz, DMSO) δ: 2.51 (q, J 7.6, 2H), 7.12 - 7.18 (m, 3H), 7.20 - 7.26 (m, 1H), 7.31 - 7.45 (m, 7H).
(lix)	6-(2-methoxy-6-(trifluoromethyl)pyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (61.6 mg, 0.176 mmol, 49.2 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-methoxy-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (125 mg, 0.412 mmol)	Mass spectroscopy: m/z 348.2 (M+H) ⁺ (ES ⁺); 346.4 (M-H) ⁻ (ES ⁻), at 4.47 min, 99.4% (method B).	(400 MHz, DMSO) δ: 3.86 (s, 3H), 7.00-7.04 (m, 1H), 7.34 (d, J 1.1, 1H), 7.38-7.46 (m, 4H), 7.46-7.52 (m, 1H), 7.75 (s, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(lx) *	6-(3-methyl-5-(trifluoromethoxy)phe nyl)-5-phenyl-1,2,4-triazin-3-amine (41 mg, 0.116 mmol, 32.3 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 4,4,5,5-tetramethyl-2-(3- methyl-5-(trifluoromethoxy)phe nyl)-1,3,2- dioxaborolane (125 mg, 0.412 mmol)	Mass spectroscopy: m/z 347.2 (M+H) ⁺ (ES ⁺); 345.4 (M-H) ⁻ (ES ⁻), at 4.72 min, 97.7% (method B).	(400 MHz, DMSO) δ: 2.32 (s, 3H), 6.85-6.91 (m, 1H), 7.12-7.18 (m, 1H), 7.32-7.41 (m, 5H), 7.41-7.47 (m, 1H), 7.51 (s, 2H).
(lxi) *	6-(3-(1,3-dioxolan-2-yl)- 5-(trifluoromethyl)phen yl)-5-phenyl- 1,2,4-triazin-3-amine (76 mg, 0.194 mmol, 54.2 %)	from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-(1,3-dioxolan-2-yl)- 5-(trifluoromethyl)phen ylboronic acid (108 mg, 0.412 mmol)	Mass spectroscopy: m/z 389.3 (M+H) ⁺ (ES ⁺); 387.5 (M-H) ⁻ (ES ⁻), at 4.32 min, 95.3% (method B).	(400 MHz, DMSO) δ: 3.92 (s, 4H), 5.81 (s, 1H), 7.34-7.41 (m, 4H), 7.41 - 7.48 (m, 1H), 7.57 (s, 2H), 7.60 (s, 1H), 7.68 (s, 1H), 7.73 (s, 1H).
(lii) *	5-phenyl-6-(3-(2,2,2- trifluoroethoxy)pheny l)-1,2,4-triazin-3- amine (86 mg, 0.246 mmol, 68.6 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-(2,2,2- trifluoroethoxy)pheny lboronic acid (91 mg, 0.412 mmol)	Mass spectroscopy: m/z 347.2 (M+H) ⁺ (ES ⁺); 345.4 (M-H) ⁻ (ES ⁻), at 4.30 min, 99.0% (method B).	(400 MHz, DMSO) δ: 4.69 (q, J 8.9, 2H), 6.87 - 6.93 (m, 1H), 7.02 (ddd, J 8.3, 2.7, 0.8, 1H), 7.07 - 7.12 (m, 1H), 7.25 (t, J 8.0, 1H), 7.31 - 7.52 (m, 7H).
(liii) *	6-(3-(methoxymethyl)phe nyl)-5- phenyl-1,2,4-triazin-3-amine (76 mg, 0.256 mmol, 71.4 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-(methoxymethyl)phe nylboronic acid (68.4 mg, 0.412 mmol)	Mass spectroscopy: m/z 293.0 (M+H) ⁺ (ES ⁺); 291.3 (M-H) ⁻ (ES ⁻), at 3.85 min, 98.5% (method B).	(400 MHz, DMSO) δ: 3.16 (s, 3H). 4.35 (s, 2H), 7.16-7.22 (m, 1H), 7.25 - 7.30 (m, 2H), 7.30 - 7.37 (m, 3H), 7.36 - 7.49 (m, 5H).
(liv) *	5-(3-amino-5-phenyl-1,2,4-triazin-6- yl)-1-methylpyridin-2(1H)-one (50 mg, 0.177 mmol, 49.2 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 1-methyl-5-(4,4,5,5- tetramethyl-1,3,2-dioxaborolan-2-yl)pyridin- 2(1H)-one (97 mg, 0.412 mmol)	Mass spectroscopy: m/z 280.0 (M+H) ⁺ (ES ⁺); 278.2 (M-H) ⁻ (ES ⁻), at 2.73 min, 98.6% (method B).	(400 MHz, DMSO) δ: 3.44 (s, 3H), 6.23 (d, J 9.4, 1H), 7.03 (dd, J 9.4, 2.6, 1H), 7.33-7.50 (m, 5H), 7.51-7.57 (m, 2H), 7.97 (d, J 2.5, 1H).
(lv) *	6-(3-methyl-5-(trifluoromethyl)phen yl)- 5-phenyl-1,2,4-triazin-3-amine (79 mg, 0.239 mmol, 66.6 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-methyl- 5-(trifluoromethyl)phen ylboronic acid (84 mg, 0.412 mmol)	Mass spectroscopy: m/z 331.1 (M+H) ⁺ (ES ⁺); 329.3 (M-H) ⁻ (ES ⁻), at 4.62 min, 99.8% (method B).	(400 MHz, DMSO) δ: 2.33 (s, 3H), 7.32 (s, 1H), 7.34-7.41 (m, 4H), 7.41 - 7.47 (m, 1H), 7.48 - 7.60 (m, 4H).
(lvi)	6-(2-methoxypyridin-4-yl)-5-phenyl- 1,2,4-triazin-3-amine (39 mg, 39%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-methoxy-4-(4,4,5,5- tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (97 mg, 0.412 mmol)	Mass spectroscopy: m/z 280.1 (M+H) ⁺ (ES ⁺); 278.4 (M-H) ⁻ (ES ⁻), at 3.60 min, 99.4% (method B).	(400 MHz, DMSO) δ: 3.81 (s, 3H), 6.75 (dd, J 1.4, 0.7, 1H), 6.88 (dd, J 5.3, 1.5, 1H), 7.34 - 7.51 (m, 5H), 7.61 (s, 2H), 8.08 (dd, J 5.3, 0.7; 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(Ixvii) *	1-(3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)phenyl)ethanone (71 mg, 0.243 mmol, 67.8 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-acetylphenylboronic acid (67.6 mg, 0.412 mmol)	Mass spectroscopy: m/z 291.1 (M+H) ⁺ (ES ⁺); 289.3 (M-H) ⁻ (ES ⁻), at 3.62 min, 99.4% (method B).	(400 MHz, DMSO) δ: 2.46 (s, 3H), 7.32-7.52 (m, 8H), 7.52-7.57 (m, 1H), 7.87-7.93 (m, 1H), 7.93-7.98 (m, 1H).
(Ixviii) *	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)benzamide (73 mg, 0.243 mmol, 67.7 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 4-carbamoylphenylboronic acid (68.0 mg, 0.412 mmol)	Mass spectroscopy: m/z 292.2 (M+H) ⁺ (ES ⁺); 290.4 (M-H) ⁻ (ES ⁻), at 2.93 min, 96.9% (method B).	(400 MHz, DMSO) δ: 7.31 - 7.46 (m, 8H), 7.48 (s, 2H), 7.81 (d, J 8.5, 2H), 7.98 (s, 1H).
(Ixix) *	6-(4-fluoro-3-(trifluoromethyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine (83 mg, 0.244 mmol, 68.0 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-(4-fluoro-3-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (120 mg, 0.412 mmol)	Mass spectroscopy: m/z 335.2 (M+H) ⁺ (ES ⁺); 333.4 (M-H) ⁻ (ES ⁻), at 4.42 min, 98.2% (method B).	(400 MHz, DMSO) δ: 7.32 - 7.51 (m, 6H), 7.55 (s, 2H), 7.63-7.68 (m, 1H), 7.70 (dd, J 7.0, 2.1, 1H).
(Ixx) *	6-(4-fluoro-3-methylphenyl)-5-phenyl-1,2,4-triazin-3-amine (72 mg, 0.257 mmol, 71.7 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 4-fluoro-3-methylphenylboronic acid (63.5 mg, 0.412 mmol)	Mass spectroscopy: m/z 281.1 (M+H) ⁺ (ES ⁺); 279.3 (M-H) ⁻ (ES ⁻), at 4.32 min, 100% (method B).	(400 MHz, DMSO) δ: 2.19 (s, 3H), 7.00-7.09 (m, 2H), 7.32-7.46 (m, 8H).
(Ixxi) *	6-(3-bromo-5-chlorophenyl)-5-phenyl-1,2,4-triazin-3-amine (30 mg, 0.083 mmol, 23.14 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-(3-bromo-5-chlorophenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (116 mg, 0.366 mmol)	Mass spectroscopy: m/z (Br) 361.2/363.1 /365.1 (M+H) ⁺ (ES ⁺); 359.3/361.3/363.3 (M-H) ⁻ (ES ⁻), at 5.07 min, 100% (method B).	(400 MHz, DMSO) δ: 7.36 - 7.38 (m, 1H), 7.39 - 7.44 (m, 4H), 7.44 - 7.50 (m, 2H), 7.59 (s, 2H), 7.69 (t, J 1.9, 1H).
(Ixxii) *	6-(naphthalen-2-yl)-5-phenyl-1,2,4-triazin-3-amine (83 mg, 0.278 mmol, 77 %)	from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and naphthalen-2-ylboronic acid (70.9 mg, 0.412 mmol)	Mass spectroscopy: m/z 299.2 (M+H) ⁺ (ES ⁺), at 4.67 min, 99.8% (method B).	(400 MHz, DMSO) δ: 7.28 - 7.36 (m, 3H), 7.37 - 7.48 (m, 5H), 7.48 - 7.55 (m, 2H), 7.81 (d, J 8.7, 1H), 7.83 - 7.92 (m, 2H), 8.02 (s, 1H).
(Ixxiii) *	5-phenyl-6-m-tolyl-1,2,4-triazin-3-amine (73.4 mg, 0.278 mmol, 78 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and m-tolylboronic acid (56.0 mg, 0.412 mmol)	Mass spectroscopy: m/z 263.2 (M+H) ⁺ (ES ⁺); 261.3 (M-H) ⁻ (ES ⁻), at 4.43 min, 99.4% (method B).	(400 MHz, DMSO) δ: 2.26 (s, 3H), 6.97-7.02 (m, 1H), 7.11-7.20 (m, 2H), 7.26 (s, 1H), 7.30 - 7.45 (m, 7H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(lxxiv) *	5-phenyl-6-(pyridin-4-yl)-1,2,4-triazin-3-amine (16 mg, 0.064 mmol, 17.78 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and pyridin-4-ylboronic acid (50.7 mg, 0.412 mmol)	Mass spectroscopy: m/z 250.2 (M+H) ⁺ (ES ⁺); 248.3 (M-H) ⁻ (ES ⁻), at 3.34 min, 99.3% (method B).	(400 MHz, DMSO) δ: 7.32 (dd, J 4.4, 1.7, 2H), 7.34 - 7.43 (m, 4H), 7.43 - 7.50 (m, 1H), 7.63 (s, 2H), 8.51 (dd, J 4.5, 1.6, 2H).
(lxxv) *	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)phenol (21 mg, 0.078 mmol, 21.81 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenol (91 mg, 0.412 mmol)	Mass spectroscopy: m/z 265.1 (M+H) ⁺ (ES ⁺); 263.4 (M-H) ⁻ (ES ⁻), at 2.77 min, 98.4% (method B).	(400 MHz, DMSO) δ: 6.69 (d, J 8.7, 2H), 7.12 (d, J 8.6, 2H), 7.26 (s, 2H), 7.31-7.44 (m, 5H), 9.59 (s, 1H).
(lxxvi)	6-(2,6-dimethoxypyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (61 mg, 0.196 mmol, 54.8 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2,6-dimethoxy-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (109 mg, 0.412 mmol)	Mass spectroscopy: m/z 310.2 (M+H) ⁺ (ES ⁺); 308.4 (M-H) ⁻ (ES ⁻), at 4.27 min, 99.6% (method B).	(400 MHz, DMSO) δ: 3.79 (s, 6H), 6.29 (s, 2H), 7.35-7.49 (m, 5H), 7.58 (s, 2H).
(lxxvii)	6-(2,6-dimethylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (44 mg, 0.154 mmol, 42.8 %)	from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (96 mg, 0.412 mmol)	Mass spectroscopy: m/z 278.2 (M+H) ⁺ (ES ⁺); 276.4 (M-H) ⁻ (ES ⁻), at 3.77 min, 96.8% (method B).	(400 MHz, DMSO) δ: 2.33 (s, 6H), 6.97 (s, 2H), 7.35-7.43 (m, 4H), 7.43 - 7.50 (m, 1H), 7.58 (s, 2H).
(lxxviii)	5-phenyl-6-(2-(trifluoromethyl)pyridin-4-yl)-1,2,4-triazin-3-amine (31 mg, 0.098 mmol, 27.3 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-(trifluoromethyl)pyridin-4-ylboronic acid (79 mg, 0.412 mmol)	Mass spectroscopy: m/z 318.2 (M+H) ⁺ (ES ⁺); 316.4 (M-H) ⁻ (ES ⁻), at 4.03 min, 100% (method B).	(400 MHz, DMSO) δ: 7.37 - 7.45 (m, 4H), 7.46 - 7.53 (m, 1H), 7.63 (dd, J 5.0, 1.2, 1H), 7.75 (s, 1H), 7.77 (s, 2H), 8.70 (d, J 5.1, 1H).
(lxxix)	6-(2-cyclopropylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (61 mg, 0.206 mmol, 57.3 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-cyclopropyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (101 mg, 0.412 mmol)	Mass spectroscopy: m/z 290.1 (M+H) ⁺ (ES ⁺); 288.4 (M-H) ⁻ (ES ⁻), at 3.92 min, 97.5% (method B).	(400 MHz, DMSO) δ: 0.76 - 0.83 (m, 2H), 0.87 - 0.93 (m, 2H), 1.96 - 2.06 (m, 1H), 6.97 (dd, J 5.1, 1.7, 1H), 7.25 (dd, J 1.6, 0.8, 1H), 7.35 - 7.44 (m, 4H), 7.44 - 7.51 (m, 1H), 7.60 (s, 2H), 8.28 (dd, J 5.1, 0.6, 1H).
(lxxx) *	5-phenyl-6-(2,2,6,6-tetramethyl-3,6-dihydro-2H-pyran-4-yl)-1,2,4-triazin-3-amine (85 mg, 0.269 mmol, 75 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 4,4,5,5-tetramethyl-2-(2,2,6,6-tetramethyl-3,6-dihydro-2H-pyran-4-yl)-1,3,2-dioxaborolan-2-yl (110 mg, 0.412 mmol)	Mass spectroscopy: m/z 311.2 (M+H) ⁺ (ES ⁺); 309.4 (M-H) ⁻ (ES ⁻), at 4.40 min, 98.2% (method B).	(400 MHz, DMSO) δ: 1.01 (s, 6H), 1.16 (s, 6H), 2.28 (d, J 1.3, 2H), 5.46 (t, J 1.4, 1H), 7.29 (s, 2H), 7.43 - 7.50 (m, 3H), 7.56 - 7.61 (m, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(lxxxi) *	6-(5-chloro-2-fluoro-3-methylphenyl)-5-phenyl-1,2,4-triazin-3-amine (10 mg, 0.031 mmol, 8.64 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 5-chloro-2-fluoro-3-methylphenylboronic acid (78 mg, 0.412 mmol)	Mass spectroscopy: m/z (Cl) 315.8/317.8 (M+H) ⁺ (ES ⁺), at 4.67 min, 97.5% (method B).	(400 MHz, DMSO) δ : 2.07 (d, J 1.9, 3H), 7.33 - 7.47 (m, 6H), 7.50 (dd, J 5.9, 2.8, 1H), 7.60 (s, 2H).
(lxxxii)	6-(2,6-dichloropyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (7 mg, 0.022 mmol, 2.205 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (250 mg, 0.996 mmol) and 2,6-dichloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (286 mg, 1.045 mmol)	Mass spectroscopy: m/z (2 Cl) 318.0/320.1/322.1 (M+H) ⁺ (ES ⁺); 316.3/318.2/320.2 (M-H) ⁻ (ES ⁻), at 4.34 min, 94.8% (method B).	(400 MHz, DMSO) δ : 7.41 - 7.48 (m, 6H), 7.48 - 7.55 (m, 1H), 7.85 (s, 2H).
(lxxxiii) *	6-(3-bromo-5-(trifluoromethoxy)phenyl)-5-phenyl-1,2,4-triazin-3-amine (23 mg, 0.055 mmol, 16.47 %)	6-iodo-5-phenyl-1,2,4-triazin-3-amine (100 mg, 0.335 mmol) and 3-bromo-5-(trifluoromethoxy)phenylboronic acid (119 mg, 0.419 mmol)	Mass spectroscopy: m/z (Br) 411.8/413.8 (M+H) ⁺ (ES ⁺); 410.0/412.0 (M-H) ⁻ (ES ⁻), at 5.15 min, 98.8% (method B).	(400 MHz, DMSO) δ : 7.14 - 7.19 (m, 1H), 7.36 - 7.42 (m, 4H), 7.42 - 7.49 (m, 1H), 7.57 - 7.66 (m, 2H), 7.63 - 7.66 (m, 1H), 7.67 - 7.70 (m, 1H).
(lxxxiv) *	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-chloro-6-methoxyphenol (72 mg, 0.215 mmol, 28.4 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-chloro-6-methoxy-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenol (248 mg, 0.870 mmol)	Mass spectroscopy: m/z (Cl) 329.0/331.1 (M+H) ⁺ (ES ⁺); 327.2/329.0 (M-H) ⁻ (ES ⁻), at 2.61 min, 98.2% (method B).	(400 MHz, DMSO) δ : 3.58 (s, 3H), 6.80 (d, J 2.0, 1H), 6.92 (d, J 2.0, 1H), 7.34 - 7.47 (m, 7H), 9.62 (s, 1H).
(lxxxv) *	6-(3,5-dichloro-4-ethoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (81 mg, 0.214 mmol, 59.8 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-(3,5-dichloro-4-ethoxyphenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (131 mg, 0.412 mmol)	Mass spectroscopy: m/z (2 Cl) 361.8/363.9 (M+H) ⁺ (ES ⁺); 360.1/362.1 (M-H) ⁻ (ES ⁻), at 5.02 min, (ES ⁻), at min, 95.6% (method B).	(400 MHz, DMSO) δ : 1.36 (t, J 7.0, 3H), 4.05 (q, J 7.0, 2H), 7.36 - 7.50 (m, 7H), 7.55 (s, 2H).
(lxxxvi) *	6-(6-amino-5-(trifluoromethyl)pyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine (30 mg, 0.089 mmol, 24.78 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-3-(trifluoromethyl)pyridin-2-amine (119 mg, 0.412 mmol)	Mass spectroscopy: m/z 333.7 (M+H) ⁺ (ES ⁺); 331.8 (M-H) ⁻ (ES ⁻), at 3.80 min, 98.4% (method B).	(400 MHz, DMSO) δ : 6.66 (s, 2H), 7.32-7.50 (m, 7H), 7.62-7.67 (m, 1H), 8.01-8.09 (m, 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(lxxxvii) *	4-(3-amino-5-(3-fluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (70 mg, 0.219 mmol, 65.5 %)	6-bromo-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile (99 mg, 0.385 mmol)	Mass spectroscopy: m/z 320.9 (M+H) ⁺ (ES ⁺); 319.1 (M-H) ⁻ (ES ⁻), at 4.37 min, 99.9% (method B).	(400 MHz, DMSO) δ: 2.39 (s, 6H), 7.11-7.17 (m, 1H), 7.25 (s, 2H), 7.26 - 7.35 (m, 2H), 7.37 - 7.44 (m, 1H), 7.64 (s, 2H).
(lxxxviii) *	6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (54 mg, 0.141 mmol, 42.1 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (118 mg, 0.385 mmol)	Mass spectroscopy: m/z (CI) 369.8/371.9 (M+H) ⁺ (ES ⁺); 368.0/370.0 (M-H) ⁻ (ES ⁻), at 4.99 min. 96.1 % (method B).	(400 MHz, DMSO) δ: 7.15 - 7.21 (m, 1H), 7.25 - 7.36 (m, 2H), 7.39 - 7.46 (m, 1H), 7.55 - 7.60 (m, 1H), 7.70 (s, 2H), 7.73-7.77 (m, 1H), 7.84-7.88 (m, 1H).
(lxxxix)	6-(2-chloropyridin-4-yl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (28 mg, 0.090 mmol, 26.9 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (92 mg, 0.385 mmol)	Mass spectroscopy: m/z (CI) 302.8/304.8 (M+H) ⁺ (ES ⁺); 301.0/303.0 (M-H) ⁻ (ES ⁻), at 3.87 min, 97.1% (method B).	(400 MHz, DMSO) δ: 7.16 - 7.23 (m, 1H), 7.27 - 7.38 (m, 3H), 1.41 - 7.48 (m, 1H), 7.49 (dd, J 1.5, 0.7, 1H), 7.80 (s, 2H), 8.35 (dd, J 5.2, 0.7, 1H).
(xc)	6-(2-chloro-6-methylpyridin-4-yl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (54 mg, 0.171 mmol, 51.1 %)	6-bromo-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol) and 2-chloro-6-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (98 mg, 0.385 mmol)	Mass spectroscopy: m/z (CI) 316.6/318.6 (M+H) ⁺ (ES ⁺); 314.8/316.8 (M-H) ⁻ (ES ⁻), at 4.05 min, 99.9% (method B).	(400 MHz, DMSO) δ: 2.40 (s, 3H), 7.13-7.16 (m, 1H), 7.16-7.21 (m, 1H), 7.27-7.29 (m, 1H), 7.29-7.39 (m, 2H), 7.40-7.48 (m, 1H), 7.78 (s, 2H).
(xci) *	4-(3-amino-5-(4-fluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (66 mg, 0.206 mmol, 61.7 %)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile (99 mg, 0.385 mmol)	Mass spectroscopy: m/z 320.7 (M+H) ⁺ (ES ⁺); 318.9 (M-H) ⁻ (ES ⁻), at 4.40 min, 99.8% (method B).	(400 MHz, DMSO) δ: 2.39 (s, 6H), 7.19-7.28 (m, 4H), 7.46 (dd, J 8.8, 5.5, 2H), 7.59 (s, 2H).
(xcii) *	6-(3-chloro-5-propoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (71 mg, 0.202 mmol, 56.3 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-(3-chloro-5-propoxyphenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (106 mg, 0.358 mmol)	Mass spectroscopy: m/z (CI) 341.6/343.6 (M+H) ⁺ (ES ⁺); 339.8/341.8 (M-H) ⁻ (ES ⁻), at 5.14 min, 96.9% (method B).	(400 MHz, DMSO) δ: 0.88 (t, J 7.4, 3H), 1.52 - 1.64 (m, 2H), 3.80 (t, J 6.6, 2H), 6.75 - 6.80 (m, 1H), 6.94 - 6.99 (m, 2H), 7.35 - 7.47 (m, 5H), 7.50 (s, 2H).
(xciii) *	6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (65 mg, 0.169 mmol, 50.5 %)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (118 mg, 0.385 mmol)	Mass spectroscopy: m/z (CI) 369.4/371.5 (M+H) ⁺ (ES ⁺); 367.7/369.7 (M-H) ⁻ (ES ⁻), at 5.03 min, 95.8% (method B).	(400 MHz, DMSO) δ: 7.25 (t, J 8.9, 2H), 7.47 (dd, J 8.8, 5.5, 2H), 7.57 (s, 1H), 7.64 (s, 2H), 7.74 (s, 1H), 7.84 (s, 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xciv)	6-(2-chloropyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (14 mg, 0.046 mmol, 13.76 %)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (92 mg, 0.385 mmol)	Mass spectroscopy: m/z (CI) 302.7/304.7 (M+H) ⁺ (ES ⁺); 300.9/302.9 (M-H) ⁻ (ES ⁻), at 3.90 min, 99.2% (method B).	(400 MHz, DMSO) δ: 7.21 - 7.33 (m, 3H), 7.44 - 7.53 (m, 3H), 7.75 (s, 2H), 8.35 (d, J 5.1, 1H).
(xcv)	6-(2-chloro-6-methylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (37 mg, 0.117 mmol, 34.9 %)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol) and 2-chloro-6-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (98 mg, 0.385 mmol)	Mass spectroscopy: m/z (CI) 316.7/318.7 (M+H) ⁺ (ES ⁺); 314.9/316.9 (M-H) ⁻ (ES ⁻), at 4.05 min, 99.5% (method B).	(400 MHz, DMSO) δ: 2.40 (s, 3H), 7.15 (s, 1H), 7.23 - 7.31 (m, 3H), 7.48 (dd, J 8.9, 5.5, 2H), 7.72 (s, 2H).
(xcvi) *	4-(3-amino-5-(4-chlorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (61 mg, 0.181 mmol, 57.4%)	6-bromo-5-(4-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile (81 mg, 0.315 mmol)	Mass spectroscopy: m/z (CI) 336.6/338.6 (M+H) ⁺ (ES ⁺); 334.8/336.8 (M-H) ⁻ (ES ⁻), at 4.67 min, 99.6% (method B).	(400 MHz, DMSO) δ: 2.40 (s, 6H), 7.25 (s, 2H), 7.40 - 7.50 (m, 4H), 7.61 (s, 2H).
(xcvii) *	6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(4-chlorophenyl)-1,2,4-triazin-3-amine (62.5 mg, 0.157 mmol, 49.7 %)	6-bromo-5-(4-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (111 mg, 0.362 mmol)	Mass spectroscopy: m/z (2 CI) 385.3/387.4 (M+H) ⁺ (ES ⁺); 383.5/385.5 (M-H) ⁻ (ES ⁻), at 5.25 min, 96.6% (method B).	(400 MHz, DMSO) δ: 7.40 - 7.51 (m, 4H), 7.59 (s, 1H), 7.67 (s, 2H), 7.74 (s, 1H), 7.85 (s, 1H).
(xcviii)	5-(4-chlorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine (12.7 mg, 0.039 mmol, 12.44 %)	6-bromo-5-(4-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (87 mg, 0.362 mmol)	Mass spectroscopy: m/z (2 CI) 318.6/320.6 (M+H) ⁺ (ES ⁺); 316.8/318.8 (M-H) ⁻ (ES ⁻), at 4.22 min, 98.2% (method B).	(400 MHz, DMSO) δ: 7.27 (dd, J 5.2, 1.5, 1H), 7.41 - 7.54 (m, 5H), 7.77 (s, 2H), 8.35 (dd, J 5.2, 0.6, 1H).
(xcix)	6-(2-chloro-6-methylpyridin-4-yl)-5-(4-chlorophenyl)-1,2,4-triazin-3-amine (46.1 mg, 0.138 mmol, 43.9 %)	6-bromo-5-(4-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2-chloro-6-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (92 mg, 0.362 mmol)	Mass spectroscopy: m/z (2 CI) 332.5/334.6 (M+H) ⁺ (ES ⁺); 330.8/332.7 (M-H) ⁻ (ES ⁻), at 4.37 min, 99.6% (method B).	(400 MHz, DMSO) δ: 2.41 (s, 3H), 7.14 - 7.18 (m, 1H), 7.27 - 7.31 (m, 1H), 7.42 - 7.54 (m, 4H), 7.74 (s, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(c) *	4-(3-amino-5-(3-chlorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (64.3 mg, 0.190 mmol, 60.3 %)	6-bromo-5-(3-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile (81 mg, 0.315 mmol)	Mass spectroscopy: m/z (CI) 336.6/338.6 (M+H) ⁺ (ES ⁺); 334.8/336.8 (M-H) ⁻ (ES ⁻), at 4.59 min, 99.3% (method B).	(400 MHz, DMSO) δ: 2.40 (s, 6H), 7.20 (ddd, J 7.8, 1.6, 1.0, 1H), 7.36 (app t, J 7.9, 1H), 7.26 (s, 2H), 7.53 (ddd, J 8.0, 2.2, 1.0, 1H), 7.59 (app t, J 1.7, 1H), 7.64 (s, 2H).
(ci) *	6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3-triazin-3-amine (67.6 mg, 0.169 mmol, 53.7 %)	6-bromo-5-(3-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (111 mg, 0.362 mmol)	Mass spectroscopy: m/z (2 CI) 385.3/387.4 (M ⁺ H) ⁺ (ES ⁺); 383.5/385.6 (M-H) ⁻ (ES ⁻), at 5.20 min, 96.4% (method B).	(400 MHz, DMSO) δ: 7.24 - 7.29 (m, 1H), 7.39 (app td, J 7.8, 0.6, 1H), 7.51 - 7.57 (m, 2H), 7.57 - 7.61 (m, 1H), 7.69 (s, 2H), 7.75 - 7.79 (m, 1H), 7.84 - 7.88 (m, 1H).
(cii)	5-(3-chlorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine (32.4 mg, 0.101 mmol, 32.0 %)	6-bromo-5-(3-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (87 mg, 0.362 mmol)	Mass spectroscopy: m/z (2CI) 318.6/320.6 (M+H) ⁺ (ES ⁺); 316.8/318.8 (M-H) ⁻ (ES ⁻), at 4.17 min, 99.0% (method B).	(400 MHz, DMSO) δ: 7.25 - 7.29 (m, 1H), 7.31 (dd, J 5.2, 1.5, 1H), 7.40 (app t, J 11.9, 1H), 7.49 - 7.53 (m, 1H), 7.54 - 7.61 (m, 2H), 7.80 (s, 2H), 8.36 (dd, J 5.2, 0.6, 1H).
(ciii)	6-(2-chloro-6-methylpyridin-4-yl)-5-(3-chlorophenyl)-1,2,4-triazin-3-amine (51.3 mg, 0.154 mmol, 49.0 %)	6-bromo-5-(3-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2-chloro-6-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (92 mg, 0.362 mmol)	Mass spectroscopy: m/z (2 CI) 332.5/334.6 (M+H) ⁺ (ES ⁺); 330.8/332.7 (M-H) ⁻ (ES ⁻), at 4.30 min, 100% (method B).	(400 MHz, DMSO) δ: 2.41 (s, 3H), 7.19 - 7.15 (m, 1H), 7.26 (ddd, J 7.8, 1.6, 1.1, 1H), 7.33 - 7.29 (m, 1H), 7.41 (app t, J 7.9, 1H), 7.57 (ddd, J 8.0, 2.2, 1.0, 1H), 7.60 (app t, J 1.7, 1H), 7.78 (s, 2H).
(civ) *	4-(3-amino-6-(3-chloro-5-(trifluoromethyl)phenyl)-1,2,4-triazin-5-yl)benzonitrile (64.7 mg, 0.171 mmol, 52.5 %)	4-(3-amino-6-bromo-1,2,4-triazin-5-yl)benzonitrile (90 mg, 0.326 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (115 mg, 0.375 mmol)	Mass spectroscopy: m/z (CI) 376.4/378.4 (M+H) ⁺ (ES ⁺); 374.6/376.6 (M-H) ⁻ (ES ⁻), at 4.67 min, 99.4% (method B).	(400 MHz, DMSO) δ: 7.54 - 7.58 (m, 1H), 7.57 - 7.62 (m, 2H), 7.65 - 7.81 (m, 3H), 7.83 - 7.87 (m, 1H), 7.87 - 7.93 (m, 2H).
(cv)	4-(3-amino-6-(2-chloro-6-methylpyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile (30.5 mg, 0.093 mmol, 28.6 %)	4-(3-amino-6-bromo-1,2,4-triazin-5-yl)benzonitrile (90 mg, 0.326 mmol) and 2-chloro-6-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (95 mg, 0.375 mmol)	Mass spectroscopy: m/z (CI) 323.6/325.6 (M+H) ⁺ (ES ⁺); 321.8/323.8 (M-H) ⁻ (ES ⁻), at 3.65 min, 98.6% (method B).	(400 MHz, DMSO) δ: 2.40 (s, 3H), 7.16 (s, 1H), 7.26 (s, 1H), 7.58 - 7.64 (m, 2H), 7.82 (s, 2H), 7.88 - 7.94 (m, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cvi) *	4-(3-amino-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (57 mg, 52%)	6-bromo-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.297 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile (88 mg, 0.341 mmol)	Mass spectroscopy: m/z 354, 356 (M+H) ⁺ (ES ⁺); 352, 354 (M-H) ⁻ (ES ⁻), at 4.72min, 95% (method B).	(400 MHz, DMSO) δ : 2.41 (s, 6H), 7.11-7.19 (m, 1H), 7.27 (s, 2H), 7.34 - 7.38 (m, 1H), 7.55 - 7.62 (m, 1H), 7.70 (s, 2H).
(cvii)	5-(3-chloro-5-fluorophenyl)-6-(2-chloro-6-methylpyridin-4-yl)-1,2,4-triazin-3-amine (18 mg, 16%)	6-bromo-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.297 mmol) and 2-chloro-6-methylpyridin-4-ylboronic acid (58.4 mg, 0.341 mmol)	Mass spectroscopy: m/z 350, 352 (M+H) ⁺ (ES ⁺); 348, 350 (M-H) ⁻ (ES ⁻), at 4.2min, 95% (method B).	(400 MHz, DMSO) δ : 2.42 (s, 3H), 7.19 (s, 1H), 7.20-7.26 (m, 1H), 7.30 (s, 1H), 7.38 (s, 1H), 7.58-7.66 (m, 1H), 7.84 (s, 2H).
(cviii) *	6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine (28 mg, 22%)	6-bromo-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.297 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (105 mg, 0.341 mmol)	Mass spectroscopy: m/z 403, 405 (M+H) ⁺ (ES ⁺); 401, 403 (M-H) ⁻ (ES ⁻) at 5.28min, 93% (method B).	(400 MHz, DMSO) δ : 7.22 (ddd, J 9.3, 2.4, 1.4, 1H), 7.34-7.39 (m, 1H), 7.58-7.64 (m, 2H), 7.76 (s, 2H), 7.79 (s, 1H), 7.89 (s, 1H).
(cix) *	6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (54 mg, 43%)	6-bromo-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (96 mg, 0.314 mmol)	Mass spectroscopy: m/z 387, 389 (M+H) ⁺ (ES ⁺); 385, 387 (M-H) ⁻ (ES ⁻), at 5.09min, 96% (method B).	(400 MHz, DMSO) δ : 7.08-7.20 (m, 2H), 7.42 (tt, J 9.3, 2.4, 1H), 7.58 (s, 1H), 7.66-7.86 (m, 3H), 7.89 (s, 1H).
(cx)	6-(2-chloro-6-methylpyridin-4-yl)-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (29 mg, 27%)	6-bromo-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol) and 2-chloro-6-methylpyridin-4-ylboronic acid (61.8 mg, 0.361 mmol)	Mass spectroscopy: m/z 334, 336 (M+H) ⁺ (ES ⁺); 332, 334 (M-H) ⁻ (ES ⁻), at 4.17min, 98% (method B).	(400 MHz, DMSO) δ : 2.42 (s, 3H), 7.11-7.18 (m, 2H), 7.17-7.20 (m, 1H), 7.25-7.31 (m, 1H), 7.44 (tt, J 9.3, 2.4, 1H), 7.82 (s, 2H).
(cxi) *	4-(3-amino-5-(3,5-difluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (48 mg, 45%)	6-bromo-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile (93 mg, 0.361 mmol)	Mass spectroscopy: m/z 338 (M+H) ⁺ (ES ⁺); 336 (M-H) ⁻ (ES ⁻), at 4.45min, 100% (method B).	(400 MHz, DMSO) δ : 2.41 (s, 6H), 7.05-7.14 (m, 2H), 7.26 (s, 2H), 7.40 (tt, J 9.3, 2.4, 1H), 7.69 (s, 2H).
(cxii) *	4-(3-amino-5-(3-chloro-4-fluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (35 mg, 33%)	6-bromo-5-(3-chloro-4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.297 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile (88 mg, 0.341 mmol)	Mass spectroscopy: m/z 354, 356 (M+H) ⁺ (ES ⁺); 352, 354 (M-H) ⁻ (ES ⁻) at 4.67min, 98% (method B).	(400 MHz, DMSO) δ : 2.41 (s, 6H), 7.22-7.28 (m, 1H), 7.28 (s, 2H), 7.37 - 7.44 (m, 1H), 7.66 (s, 2H), 7.75 (dd, J 7.2, 22, 1 H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cxiii)	5-(3-chloro-4-fluorophenyl)-6-(2-chloro-6-methylpyridin-4-yl)-1,2,4-triazin-3-amine (40 mg, 38%)	6-bromo-5-(3-chloro-4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.297 mmol) and 2-chloro-6-methylpyridin-4-ylboronic acid (61.8 mg, 0.361 mmol)	Mass spectroscopy: m/z 350, 352 (M+H) ⁺ (ES ⁺), 348, 350 (M-H) ⁻ (ES ⁻), at 4.39min, 99% (method B).	(400 MHz, DMSO) δ : 2.42 (s, 3H), 7.21 (s, 1H), 7.30 (s, 1H), 7.30 - 7.35 (m, 1H), 7.46 (app t, J 8.9, 1H), 7.66 - 7.91 (m, 3H).
(cxiv)	5-(3-chloro-4-fluorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine (9 mg, 9%)	6-bromo-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol) and 2-chloropyridin-4-ylboronic acid (61.8 mg, 0.361 mmol)	Mass spectroscopy: m/z 336, 338 (M+H) ⁺ (ES ⁺); 334, 336 (M-H) ⁻ (ES ⁻), at 4.2min, 98% (method B).	(400 MHz, DMSO) δ : 7.30 (dd, J 5.2, 1.5, 1H), 7.34 (ddd, J 8.6, 4.7, 2.2, 1H), 7.42-7.51 (m, 1H), 7.53-7.57 (m, 1H), 7.75 (dd, J 7.2, 2.1, 1H), 7.82 (s, 2H), 8.37 (dd, J 5.2, 0.6, 1H).
(cxv)	5-(3-chloro-4-fluorophenyl)-6-(3-chloro-5-(trifluoromethyl)phenyl)-1,2,4-triazin-3-amine (50 mg, 42%)	6-bromo-5-(3-chloro-4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.297 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (91 mg, 0.297 mmol)	Mass spectroscopy: m/z 403, 405 (M+H) ⁺ (ES ⁺); 401, 403 (M-H) ⁻ (ES ⁻), at 5.22min, 100% (method B).	(400 MHz, DMSO) δ : 7.33 (ddd, J 8.6, 4.7, 2.2, 1H), 7.45 (app t, J 8.9, 1H), 7.61 (s, 1H), 7.63-7.76 (m, 3H), 7.78 (s, 1H), 7.88 (s, 1H).
(cxvi) *	4-(3-amino-5-(3,4-difluorophenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (35mg, 33%)	6-bromo-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol) and 2,6-methyl-4-(4,4,5,5-tetra methyl-1,3,2-dioxaborolan-2-yl)benzonitrile (93 mg, 0.361 mmol)	Mass spectroscopy: m/z 338 (M+H) ⁺ (ES ⁺), 336 (M-H) ⁻ (ES ⁻), at 4.9min, 99% (method B).	(400 MHz, DMSO) δ : 2.41 (s, 6H), 7.10-7.20 (m, 1H), 7.26 (s, 2H), 7.40 - 7.50 (m, 1H), 7.54 (ddd, J 11.4, 7.8, 2.1, 1H), 7.65 (s, 2H).
(cxvii)	6-(2-chloro-6-methylpyridin-4-yl)-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (28 mg, 27%)	6-bromo-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol) and 2-chloro-6-methylpyridine-ylboronic acid (61.8 mg, 0.361 mmol)	Mass spectroscopy: m/z 334, 336 (M+H) ⁺ (ES ⁺); 332, 334 (M-H) ⁻ (ES ⁻), at 4.15min, 99% (method B).	(400 MHz, DMSO) δ : 2.41 (s, 3H), 7.20 (s, 1H), 7.20 - 7.24 (m, 1H), 7.28 (s, 1H), 7.44 - 7.62 (m, 2H), 7.79 (s, 2H).
(cxviii)	6-(2-chloropyridin-4-yl)-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (10 mg, 10%)	6-bromo-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol) and 2-chloropyridin-4-ylboronic acid (56.7 mg, 0.361 mmol)	Mass spectroscopy: m/z 320, 322 (M+H) ⁺ (ES ⁺); 318, 320 (M-H) ⁻ (ES ⁻), at 4.0min, 96% (method B).	(400 MHz, DMSO) δ : 7.18 - 7.26 (m, 1H), 7.28 (dd, J 5.2, 1.5, 1H), 7.44 - 7.62 (m, 3H), 7.81 (s, 2H), 8.36 (dd, J 5.2, 0.6, 1H).
(cxix) *	6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (16 mg, 13%)	6-bromo-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol) and 2-(3-chloro-5-(trifluoromethyl)phenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (96mg, 0.314 mmol)	Mass spectroscopy: m/z 387, 389 (M+H) ⁺ (ES ⁺); 385, 387 (M-H) ⁻ (ES ⁻), at 5.07min, 95% (method B).	(400 MHz, DMSO) δ : 7.17 - 7.26 (m, 1H), 7.43 - 7.57 (m, 2H), 7.59 (s, 1H), 7.71 (s, 2H), 7.76 (s, 1H), 7.87 (s, 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cxx)	6-(3-chloro-5-(trifluoromethyl)phenyl)-5-(4-(methoxymethyl)phe nyl)-1,2,4-triazin-3-amine (36 mg, 0.087 mmol, 28.7 %)	6-bromo-5-(4-(methoxymethyl)phe nyl)-1,2,4-triazin-3-amine (90 mg, 0.305 mmol) and 2-(3-chloro-5-(trifluoromethyl)pheh yl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (107 mg, 0.351 mmol)	Mass spectroscopy: m/z (CI) 395.3/397.3 (M+H) ⁺ (ES ⁺); 393.5/395.5 (M-H) ⁻ (ES ⁻), at 4.93 min, 95.9% (method B).	(400 MHz, DMSO) δ: 3.26 (s, 3H), 4.43 (s, 2H), 7.33 (d, J 8.5, 2H), 7.39 (d, J 8.4, 2H), 7.57 (s, 1H), 7.64 (s, 2H), 7.72 (s, 1H), 7.83 (s, 1H).
(cxxi)	6-(2-chloro-6-methylpyridin-4-yl)-5-(4-(methoxymethyl)phe nyl)-1,2,4-triazin-3-amine (23 mg, 0.066 mmol, 21.49 %)	6-bromo-5-(4- (methoxymethyl)phe nyl)-1,2,4-triazin-3-amine (90 mg, 0.305 mmol) and 2-chloro-6-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (89 mg, 0.351 mmol)	Mass spectroscopy: m/z (CI) 342.6/344.5 (M+H) ⁺ (ES ⁺), 340.8/342.8 (M-H) ⁻ (ES ⁻), at 3.93 min, 97.4% (method B).	(400 MHz, DMSO) δ: 2.39 (s, 3H), 3.28 (s, 3H), 4.45 (s, 2H), 7.08 - 7.14 (m, 1H), 7.25 - 7.31 (m, 1H), 7.35 (d, J 8.5, 2H), 7.41 (d, J 8.4, 2H), 7.72 (s, 2H).
(cxxii)	6-(2,6-dimethylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (23 mg, 0.078 mmol, 23.19 %)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol) and 2,6-dimethylpyridin-4-ylboronic acid (58.1 mg, 0.385 mmol)	Mass spectroscopy: m/z 296.8 (M+H) ⁺ (ES ⁺); 295.0 (M-H) ⁻ (ES ⁻), at 3.85 min, 99.6% (method B).	(400 MHz, DMSO) δ: 2.40 (s, 6H), 7.10 (s, 2H), 7.20 - 7.31 (m, 2H), 7.40 - 7.53 (m, 2H), 7.68 (s, 2H).
(cxxiii)	6-(3-chloro-5-methylphenyl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (67 mg, 0.212 mmol, 63.3 %)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol) and 3-chloro-5-methylphenylboronic acid (65.5 mg, 0.385 mmol)	Mass spectroscopy: m/z (CI) 315.6/317.6 (M+H) ⁺ (ES ⁺); 313.8/315.8 (M-H) ⁻ (ES ⁻), at 4.82 min, 99.4% (method B).	(400 MHz, DMSO) δ: 2.25 (s, 3H), 7.10-7.17 (m, 2H), 7.19-7.28 (m, 3H), 7.42-7.49 (m, 2H), 7.51, (s, 2H).
(cxxiv) *	6-(6-fluoropyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine (47 mg, 0.173 mmol, 58.0 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 2-fluoro-5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (77 mg, 0.344 mmol)	Mass spectroscopy: m/z 268.2 (M+H) ⁺ (ES ⁺); 266.3 (M-H) ⁻ (ES ⁻), at 3.54 min, 98.5% (method B).	(400 MHz, DMSO) δ: 7.17 (ddd, J 8.5, 2.8, 0.5, 1H), 7.53 (s, 2H), 7.35 - 7.48 (m, 5H), 7.86 - 7.94 (m, 1H), 8.13 - 8.19 (m, 1H).
(cxxv) *	6-(3,5-dimethylisoxazol-4-yl)-5-phenyl-1,2,4-triazin-3-amine (8 mg, 0.030 mmol, 10.02 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (75 mg, 0.299 mmol) and 5 dimethylisoxazol-4-ylboronic acid (42.1 mg, 0.299 mmol)	Mass spectroscopy: m/z 268.2 (M+H) ⁺ (ES ⁺); 266.4 (M-H) ⁻ (ES ⁻), at 3.48 min, 96.2% (method B).	(400 MHz, DMSO) δ: 1.85 (s, 3H), 2.02 (s, 3H), 7.38 - 7.55 (m, 7H).
(cxxvi) *	6-(3,5-diisopropylphenyl)-5-phenyl-1,2,4-triazin-3-amine (84.5 mg, 0.254 mmol, 70.9 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-(3,5-diisopropylphenyl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (119 mg, 0.412 mmol)	Mass spectroscopy: m/z 333.3 (M+H) ⁺ (ES ⁺); 331.5 (M-H) ⁻ (ES ⁻), at 5.24 min, 100% (254nm).	(400 MHz, DMSO) δ: 1.06 (d, J 6.9, 12H), 2.78 (hept, J 6.8, 2H), 6.96 - 7.06 (m, 3H), 7.31 - 7.45 (m, 7H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cxxvii) *	6-(3-fluoro-5-(2,2,2-trifluoroethoxy)phenyl)-5-phenyl-1,2,4-triazin-3-amine (80 mg, 0.214 mmol, 59.7 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-fluoro-5-(2,2,2-trifluoroethoxy)phenylboronic acid (98 mg, 0.412 mmol)	Mass spectroscopy: m/z 365.2 (M+H) ⁺ (ES ⁺); 363.4 (M-H) ⁻ (ES ⁻), at 4.43 min, 97.4% (method B).	(400 MHz, DMSO) δ: 4.73 (q, J 8.8, 2H), 6.76 (ddd, J 9.5, 2.3, 1.4, 1H), 6.89 - 6.94 (m, 1H), 6.99 (dt, J 10.7, 2.3, 1H), 7.52 (s, 2H), 7.34 - 7.48 (m, 5H).
(cxxviii) *	N-(4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-(trifluoromethyl)phenyl)acetamide (99 mg, 0.255 mmol, 71.0 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and N-(4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-2-(trifluoromethyl)phenyl)acetamide (136 mg, 0.412 mmol)	Mass spectroscopy: m/z 374.1 (M+H) ⁺ (ES ⁺); 372.3 (M-H) ⁻ (ES ⁻), at 3.52 min 98.9% (method B).	(400 MHz, DMSO) δ: 2.04 (s, 3H), 7.34-7.48 (m, 5H), 7.49-7.68 (m, 5H), 9.55 (s, 1H).
(cxxix) *	5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-fluorobenzonitrile (43 mg, 0.147 mmol, 40.9 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-cyano 4 fluorophenylboronic acid (68.0 mg, 0.412 mmol)	Mass spectroscopy: m/z 292.1 (M+H) ⁺ (ES ⁺); 290.3 (M-H) ⁻ (ES ⁻), at 3.79 min. 99.3% (method B).	(400 MHz, DMSO) δ: 7.34 - 7.42 (m, 4H), 7.42 - 7.47 (m, 1H), 7.50 (t, J 9.2, 1H), 7.57 (s, 2H), 7.67 (ddd, J 8.8, 5.3, 2.3, 1H), 7.89 (dd, J 6.2, 2.3, 1H).
(cxxx) *	3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-N,N-dimethylbenzamide (80 mg, 0.251 mmol, 69.9 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 3-(dimethylcarbamoyl)phenylboronic acid (80 mg, 0.412 mmol)	Mass spectroscopy: m/z 320.2 (M+H) ⁺ (ES ⁺); 318.4 (M-H) ⁻ (ES ⁻), at 3.30 min, 100% (method B).	(400 MHz, DMSO) δ: 2.60 (s, 3H), 2.89 (s, 3H), 7.19 - 7.24 (m, 1H), 7.31 - 7.38 (m, 3H), 7.38 - 7.47 (m, 6H), 7.48 - 7.52 (m, 1H).
(cxxxi) *	6-(1-methyl-1H-pyrazol-4-yl)-5-phenyl-1,2,4-triazin-3-amine (43 mg, 0.168 mmol, 47.0 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 1-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-1H-pyrazole (86 mg, 0.412 mmol)	Mass spectroscopy: m/z 253.2 (M+H) ⁺ (ES ⁺); 251.4 (M-H) ⁻ (ES ⁻), at 3.15 min, 98.8% (method B).	(400 MHz, DMSO) δ: 3.77 (s, 3H), 7.04 (d, J 0.7, 1H), 7.24 (s, 2H), 7.43 - 7.56 (m, 5H), 7.64 (s, 1H).
(cxxxii) *	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-1-methylpyridin-2(1H)-one (33 mg, 0.115 mmol, 32.1 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 1-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridin-2(1 H)-one (97 mg, 0.412 mmol)	Mass spectroscopy: m/z 280.1 (M+H) ⁺ (ES ⁺); 278.4 (M-H) ⁻ (ES ⁻), at 2.92 min, 97.4% (method B).	(400 MHz, DMSO) δ: 3.39 (s, 3H), 6.14 (dd, J 7.0, 2.0, 1H), 6.32 (d, J 1.7, 1H), 7.38 - 7.54 (m, 5H), 7.56 - 7.70 (m, 3H).
(cxxxiii) *	6-(3-morpholinophenyl)-5-phenyl-1,2,4-triazin-3-amine (65 mg, 0.192 mmol, 53.6 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 4-(3-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)morpholine (119 mg, 0.412 mmol)	Mass spectroscopy: m/z 334.3 (M+H) ⁺ (ES ⁺); 332.4 (M-H) ⁻ (ES ⁻), at 4.07 min, 98.6% (method B).	(400 MHz, DMSO) δ: 2.87 - 3.02 (m, 4H), 3.58 - 3.72 (m, 4H), 6.74 (d, J 7.7, 1H), 6.86 - 6.94 (m, 2H), 7.16 (t, J 7.6, 1H), 7.28 - 7.45 (m, 7H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cxxxiv) *	6-(1-benzyl-1H-pyrazol-4-yl)-5-phenyl-1,2,4-triazin-3-amine (78 mg, 0.237 mmol, 66.1 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 1-benzyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-1H-pyrazole (117 mg, 0.412 mmol)	Mass spectroscopy: m/z 329.3 (M+H) ⁺ (ES ⁺); 327.5 (M-H) ⁻ (ES ⁻), at 4.07 min, 99.8% (method B).	(400 MHz, DMSO) δ: 5.26 (s, 2H), 7.12-7.18 (m, 2H), 7.20 (d, J 0.7, 1H), 7.26 (s, 2H), 7.27-7.37 (m, 3H), 7.40 - 7.53 (m, 5H), 7.67 (d, J 0.7, 1H).
(cxxxv) *	6-(2-methoxypyrimidin-5-yl)-5-phenyl-1,2,4-triazin-3-amine (34 mg, 0.119 mmol, 33.2 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-methoxypyrimidin-5-ylboronic acid (63.5 mg, 0.412 mmol)	Mass spectroscopy: m/z 281.2 (M+H) ⁺ (ES ⁺); 279.4 (M-H) ⁻ (ES ⁻), at 3.42 min, 98.2% (method B).	(400 MHz, DMSO) δ: 3.91 (s, 3H), 7.38-7.49 (m, 5H), 7.55 (s, 2H), 8.50 (s, 2H).
(cxxxvi) *	6-(6-methoxypyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine (50 mg, 0.176 mmol, 49.1 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 6-methoxypyridin-3-ylboronic acid (63.0 mg, 0.412 mmol)	Mass spectroscopy: m/z 280.1 (M+H) ⁺ (ES ⁺); 278.4 (M-H) ⁻ (ES ⁻), at 3.88 min, 98.3% (method B).	(400 MHz, DMSO) δ: 3.84 (s, 3H), 6.78 (dd, J 8.6, 0.7, 1H), 7.34 - 7.48 (m, 7H), 7.60 (dd, J 8.6, 2.5, 1H), 8.10 (dd, J 2.5, 0.7, 1H).
(cxxxvii) *	6-(3-(methylsulfinyl)phenyl)-5-phenyl-1,2,4-triazin-3-amine (70 mg, 0.217 mmol, 60.4 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and with 3-(methylsulfinyl)phenylboronic acid (76 mg, 0.412 mmol)	Mass spectroscopy: m/z 311.1 (M+H) ⁺ (ES ⁺); 309.3 (M-H) ⁻ (ES ⁻), at 3.29 min, 96.0% (method B).	(400 MHz, DMSO) δ: 2.58 (s, 3H), 7.32-7.47 (m, 5H), 7.47-7.57 (m, 4H), 7.58-7.60 (m, J 1.3, 1H), 7.63 (dt, J 7.3, 1.7, 1H).
(cxxxviii)	4-(3-amino-6-(2-chloropyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile (11.3 mg, 0.036 mmol, 10.93 %)	4-(3-amino-6-bromo-1,2,4-triazin-5-yl)benzonitrile (90 mg, 0.326 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (90 mg, 0.375 mmol)	Mass spectroscopy: m/z (CI) 309.6/311.7 (M+H) ⁺ (ES ⁺); 307.9/309.9 (M-H) ⁻ (ES ⁻), at 3.50 min, 97.3% (method B).	(400 MHz, DMSO) δ: 2.25 (dd, J 5.2, 1.5, 1H), 7.51 (dd, J 1.5, 0.7, 1H), 7.58-7.65 (m, 2H), 7.85 (s, 2H), 7.89 - 7.94 (m, 2H), 8.34 (dd, J 5.2, 0.6, 1H).
(cxxxix) *	4-(3-amino-5-(4-(methoxymethyl)phe-nyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (47 mg, 0.132 mmol, 43.2 %)	6-bromo-5-(4-(methoxymethyl)phe-nyl)-1,2,4-triazin-3-amine (90 mg, 0.305 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile (78 mg, 0.305 mmol)	Mass spectroscopy: m/z 346.6 (M+H) ⁺ (ES ⁺); 344.8 (M-H) ⁻ (ES ⁻), at 4.25 min, 96.7% (method B).	(400 MHz, DMSO) δ: 2.38 (s, 6H), 4.43 (s, 2H), 7.23 (s, 2H), 7.32 (d, J 8.5, 2H), 7.39 (d, J 8.4, 2H), 7.67 (s, 2H).
(cxli)	6-(2-chloropyridin-4-yl)-5-(4-(methoxymethyl)phe-nyl)-1,2,4-triazin-3-amine (26 mg, 0.077 mmol, 25.3 %)	6-bromo-5-(4-(methoxymethyl)phe-nyl)-1,2,4-triazin-3-amine (90 mg, 0.305 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (84 mg, 0.351 mmol)	Mass spectroscopy: m/z (CI) 328.6/330.5 (M+H) ⁺ (ES ⁺); 326.8/328.8 (M-H) ⁻ (ES ⁻), at 3.79 min, 97.4% (method B).	(400 MHz, DMSO) δ: 3.29 (s, 3H), 4.45 (s, 2H), 7.28 (dd, J 5.2, 1.5, 1H), 7.35 (d, J 8.5, 2H), 7.42 (d, J 8.4, 2H), 7.48 (dd, J 1.5, 0.7, 1H), 7.74 (s, 2H), 8.33 (dd, J 5.2, 0.7, 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cxli) *	6-(E)-5-phenyl-6-styryl-1,2,4-triazin-3-amine (27 mg, 0.098 mmol, 27.5 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and (E)-styrylboronic acid (61.0 mg, 0.412 mmol)	Mass spectroscopy: m/z z 275.1 (M+H) ⁺ (ES ⁺), at 4.78 min, 93.2% (method B).	(400 MHz, DMSO) δ: 7.09 (d, J 16.0, 1H), 7.28 (t, J 7.3, 1H), 7.36 (t, J 7.5, 2H), 7.44 (s, 2H), 7.49 (d, J 7.3, 2H), 7.55-7.62 (m, 4H), 7.64-7.70 (m, 2H).
(cxlii) *	6-(3-amino-5-phenyl-1,2,4-triazin-6-yl)indolin-2-one (34 mg, 0.111 mmol, 31.0%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 2-oxindolin-6-ylboronic acid (72.9 mg, 0.412 mmol)	Mass spectroscopy: m/z 304.7 (M+H) ⁺ (ES ⁺); 302.9 (M-H) ⁻ (ES ⁻), at 3.47 min, 99.1% (method B).	(400 MHz, DMSO) δ: 3.48 (s, 2H), 6.80 (dd, J 7.6, 1.6, 1H), 6.86-6.690 (m, 1H), 7.11 (d, J 7.7, 1H), 7.31 - 7.47 (m, 7H), 10.38 (s, 1H).
(cxliii) *	tert-butyl 5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)pyridin-2-yl(methyl)carbamate (120 mg, 0.308 mmol, 42.9 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol) and 6-(tert-butoxycarbonyl(meth yl)amino)pyridin-3-ylboronic acid (181 mg, 0.717 mmol)	Mass spectroscopy: m/z 379.5 (M+H) ⁺ (ES ⁺); 377.8 (M-H) ⁻ (ES ⁻), at 4.53 min, 97.1% (method B).	(400 MHz, DMSO) δ: 1.45 (s, 9H), 3.28 (s, 3H), 7.35-7.48 (m, 5H), 7.49 (s, 2H), 7.60 (dd, J 8.7, 0.8, 1H), 7.66 (dd, J 8.7, 2.4, 1H), 8.30 (dd, J 2.4, 0.8, 1H).
(cxliv)	5-(3-chloro-5-fluorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine (22 mg, 22%)	6-bromo-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.297 mmol), 2-chloropyridin-4-ylboronic acid (53.7 mg, 0.341 mmol)	Mass spectroscopy: m/z 336, 338 (M+H) ⁺ (ES ⁺); 334, 336 (M-H) ⁻ (ES ⁻), at 4.27 min, 100% purity (method B).	(400 MHz, DMSO) δ: 7.24 (ddd, J 9.2, 2.4, 1.4 Hz, 1H), 7.30 (dd, J 5.2, 1.4 Hz, 1H), 7.39 (t, J 1.4 Hz, 1H), 7.53 (dd, J 1.4, 0.6 Hz, 1H), 7.59 - 7.65 (m, 1H), 7.85 (s, 2H), 8.38 (dd, J 5.2, 0.6 Hz, 1H).
(cxlv)	6-(2-chloropyridin-4-yl)-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (22 mg, 22%)	6-bromo-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol), 2-chloropyridin-4-ylboronic acid (56.7 mg, 0.361 mmol)	Mass spectroscopy: m/z 320, 322 (M+H) ⁺ (ES ⁺); 318, 320 (M-H) ⁻ (ES ⁻), at 3.98 min, 98.8% purity (method B)	(400 MHz, DMSO) δ: 7.11 - 7.24 (m, 2H), 7.30 (dd, J 5.1, 1.4 Hz, 1H), 7.43 (tt, J 9.3, 2.4 Hz, 1H), 7.53 (dd, J 1.4, 0.6 Hz, 1H), 7.84 (s, 2H), 8.38 (dd, J 5.1, 0.6 Hz,
(cxlvi) *	4-(3-amino-5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-6-yl)-2,6-dimethylbenzonitrile (32 mg, 30%)	6-bromo-5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-3-amine (90 mg, 0.284 mmol), 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile (84 mg, 0.326 mmol)	Mass spectroscopy: m/z 368 (M+H) ⁺ (ES ⁺); 366 (M-H) ⁻ (ES ⁻) at 4.42 min, 99% purity (method B).	(400 MHz, DMSO) δ: 2.39 (s, 6H), 7.15-7.21 (m, 2H), 7.24 (s, 7.31 (t, 2H), 7.24 Hz, 1H), 7.43-7.48 (m, 2H), 7.57 (s, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cxlvii)	6-(2-chloro-6-methylpyridin-4-yl)-5-(4-(difluoromethoxy)phe nyl)-1,2,4-triazin-3-amine (15 mg, 14%)	6-bromo-5-(4-(difluoromethoxy)phe nyl)-1,2,4-triazin-3-amine (90 mg, 0.284 mmol), 2-chloro-6-methylpyridin-4-ylboronic acid (55.9 mg, 0.326 mmol)	Mass spectroscopy: m/z 364, 366 (M+H) ⁺ (ES ⁺); 362, 364 (M-H) ⁻ (ES ⁻), at 4.14min, 98% purity (method B).	(400 MHz, DMSO) δ: 2.40 (s, 3H), 7.17 (s, 1H), 7.22 (d, J 8.7 Hz, 2H), 7.27 (d, J 0.7 Hz, 1H), 7.33 (t, ² J _{HF} 72 Hz, 1H), 7.46 - 7.51 (m, 2H). 7.71 (s, 2H).
(cxlviii)	6-(2-chloropyridin-4-yl)-5-(4-(difluoromethoxy)phe nyl)-1,2,4-triazin-3-amine (17 mg, 17%)	6-bromo-5-(4-(difluoromethoxy)phe nyl)-1,2,4-triazin-3-amine (90 mg, 0.284 mmol), 2-chloropyridin-4-ylboronic acid (51.4 mg, 0.326 mmol)	Mass spectroscopy: m/z 350, 352 (M+H) ⁺ (ES ⁺); 348, 350 (M-H) ⁻ (ES ⁻), at 4.0 min, 98% purity (method B)	(400 MHz, DMSO) δ: 7.21 (d, J 8.7 Hz, 2H), 7.29 (dd, J 5.2, 1.5 Hz, 1H), 7.34 (t, ² J _{HF} 72 Hz, 1H), 7.46 - 7.55 (m, 3H), 7.73 (s, 2H), 8.35 (dd, J 5.2, 0.6 Hz, 1H).
(cxlix) *	6-(3-chloro-5-(trifluoromethyl)phen yl)-5-(4-(difluoromethoxy)phe nyl)-1,2,4-triazin-3-amine (67 mg, 54%)	6-bromo-5-(4-(difluoromethoxy)phe nyl)-1,2,4-triazin-3-amine (90 mg, 0.284 mmol), 2-(3-chloro-5-(trifluoromethyl)phen yl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (87 mg, 0.284 mmol)	Mass spectroscopy: m/z 417, 419 (M+H) ⁺ (ES ⁺); 415, 417 (M-H) ⁻ (ES ⁻), at 5.02 min, 95% purity (method B).	(400 MHz, DMSO) δ: 7.17 - 7.23 (m, 2H), 7.31 (t, ² J _{HF} 72 Hz, 1H), 7.44 - 7.50 (m, 2H), 7.56 - 7.59 (m, . 1H), 7.63 (s, 2H), 7.74 - 7.75 (m, 1H), 7.84 - 7.85 (m, 1H).
(cl) *	5-(3-amino-5-(3-fluorophenyl)-1,2,4-triazin-6-yl)-2-chlorophenol (16 mg 15%)	6-bromo-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol), 4 chloro-3-hydroxyphenylboroni c acid (57.7 mg, 0.334 mmol)	Mass spectroscopy: m/z 317, 319 (M+H) ⁺ (ES ⁺), 315, 317 (M- H) ⁻ (ES ⁻), at 2.68min, 97% purity (method B).	(400 MHz, DMSO) δ: 6.64 (dd, J 8.2, 2.0 Hz, 1H), 7.07 (d, J 2.0 Hz, 1H), 7.23 (d, J 8.2 Hz, 1H), 7.34-7.48 (m, 7H), 10.26 (s, 1H).
(cli) *	4-(3-amino-6-(3-chloro-4-hydroxyphenyl)-1,2,4-triazin-5-yl)benzonitrile (21 mg, 23%)	4-(3-amino-6-bromo-1,2,4-triazin-5-yl)betzonitrile (75 mg, 0.272 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenol (76 mg, 0.299 mmol)	Mass spectroscopy: m/z (Cl) 324.2/326.3 (M+H) ⁺ (ES ⁺); 322.1/324.2 (M-H) ⁻ (ES ⁻), at 2.48 min, 95.4% purity (method B).	(400 MHz, DMSO) δ: 6.80-6.93(m, 1H), 6.99 (dd, J 8.4, 2.2 Hz, 1H), 7.36 (d, J 2.2 Hz, 1H), 7.53-7.64 (m, 2H), 7.48 (s, 2H), 7.84 - 7.93 (m, 2H), 10.44 (s, 1H).
(clii) *	3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-(trifluoromethoxy)phe nol (180 mg, 65%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (200 mg, 0.797 mmol), 3-hydroxy-5-(trifluoromethoxy)phe nylboronic acid (265 mg, 1.195 mmol)	Mass spectroscopy: m/z 349 (M+H) ⁺ (ES ⁺); 347 (M-H) ⁻ (ES ⁻), at 3.22min, 100% purity (method B).	(400 MHz, DMSO) δ: 6.55 - 6.56 (m, 1H), 6.64 - 6.65 (m, 1H), 6.87 - 6.91 (m, 1H), 7.31 - 7.53 (m, 7H), 10.15 (s, 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cliii)	5-(3-chloro-5-fluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine (40 mg, 40%)	6-bromo-5-(3-chloro-5-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.297 mmol), 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (79 mg, 0.341 mmol)	Mass spectroscopy: m/z 330(M+H) ⁺ (ES ⁺); 328 (M-H) ⁻ (ES ⁻), at 3.27min, 98% purity (method B).	(400 MHz, DMSO) δ: 2.37 (s, 6H), 7.02 (s, 2H), 7.18 (ddd, J = 9.3, 2.4, 1.4 Hz, 1H), 7.36 (t, J 1.4 Hz, 1H), 7.56 - 7.61 (m, 1H), 7.70 (s, 2H).
(cliv)	5-(3,5-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine (50 mg, 49%)	6-bromo-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol), 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (84 mg, 0.361 mmol)	Mass spectroscopy: m/z 314 (M+H) ⁺ (ES ⁺); 312 (M-H) ⁻ (ES ⁻), at 3.95min, 97% purity (method B)	(400 MHz, DMSO) δ: 2.37 (s, 6H), 7.01 (s, 2H), 7.04 - 7.16 (m, 2H), 7.38 - 7.44 (m, 1H), 7.70 (s, 2H).
(clv)	5-(3,4-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine	6-bromo-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol), 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (84 mg, 0.361 mmol)	Mass spectroscopy: m/z 314(M+H) ⁺ (ES ⁺); 313 (M-H) ⁻ (ES ⁻), at 3.97min, 99% purity (method B).	(400 MHz, DMSO) δ: 2.37 (s, 6H), 7.01 (s, 2H), 7.15 - 7.23 (m, 1H), 7.42-7.56 (m, 2H), 7.65 (s, 2H).
(clvi)	5-(3-chloro-4-fluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine (38 mg, 38%)	6-bromo-5-(3-chloro-4-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.297 mmol), 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (79 mg, 0.341 mmol)	Mass spectroscopy: m/z 330(M+H) ⁺ (ES ⁺); 328 (M-H) ⁻ (ES ⁻), at 4.2min, 97% purity (method B).	(400 MHz, DMSO) δ: 2.37 (s, 6H), 7.02 (s, 2H), 7.29 (ddd, J 8.6, 4.7, 2.2 Hz, 1H), 7.40 - 7.45 (m, 1H), 7.65 (s, 2H), 7.73 (dd, J 7.2, 2.2 Hz, 1H).
(clvii)	5-(4-(difluoromethoxy)phe nyl)-6-(2,6-dimethylpyridin-4-yl) 1,2,4-triazin-3-amine (36 mg, 37%)	6-bromo-5-(4-(difluoromethoxy)phe nyl)-1,2,4-triazin-3-amine (90 mg, 0.284 mmol), 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (76 mg, 0.326 mmol)	Mass spectroscopy: m/z 344(M+H) ⁺ (ES ⁺); 342 (M-H) ⁻ (ES ⁻), at 3.93min, 99% purity (method B).	(400 MHz, DMSO) δ: 2.35 (s, 6H), 6.99 (s, 2H), 7.15 - 7.23 (m, 2H), 7.32 (t, ² J _{HF} 72 Hz, 1H), 7.43 - 7.49 (m, 2H), 7.58 (s, 2H).
(clviii)	6-(2,6-dimethylpyridin-4-yl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (42 mg, 41%)	6-bromo-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.334 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (78 mg, 0.334 mmol)	Mass spectroscopy: m/z 295.0 (M-H) ⁻ (ES ⁻), at 3.82 min, 98.1% purity (method B).	(400 MHz, DMSO) δ: 2.36 (s, 6H), 7.02 (s, 2H), 7.17 (d, J 7.7 Hz, 1H), 7.25-7.36 (m, 2H), 7.38 - 7.45 (m, 1H), 7.66 (s, 2H).
(clix)	5-(4-chlorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine (33 mg, 34%)	6-bromo-5-(4-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (73.5 mg, 0.315 mmol)	Mass spectroscopy: m/z 312.7/314.7 (M+H) ⁺ (ES ⁺); 310.9/312.9 (M-H) ⁻ (ES ⁻), at 4.17 min, 100% purity (method B).	(400 MHz, DMSO) δ: 2.39 (s, 6H), 7.07 (s, 2H), 7.41 - 7.51 (m, 4H), 7.67 (s, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(clx)	4-(3-amino-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-5-yl)benzotrile (27 mg, 27%)	4-(3-amino-6-bromo-1,2,4-triazin-5-yl)benzotrile (90 mg, 0.326 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (76 mg, 0.326 mmol)	Mass spectroscopy: m/z 303.8 (M+H) ⁺ (ES ⁺); 302.0 (M-H) ⁻ (ES ⁻), at 3.47 min, 98.5% purity (method B).	(400 MHz, DMSO) δ: 2.36 (s, 6H), 7.01 (s, 2H), 7.55-7.64 (m, 2H), 7.73 (s, 2H), 7.85 - 7.95 (m, 2H).
(clxi)	5-(3-chlorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine (31 mg, 32%)	6-bromo-5-(3-chlorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.315 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (73.5 mg, 0.315 mmol)	Mass spectroscopy: m/z 312.7/314.7 (M+H) ⁺ (ES ⁺); 310.9/312.9 (M-H) ⁻ (ES ⁻), at 4.10 min, 100% purity (method B).	(400 MHz, DMSO) δ: 2.35 (s, 6H), 7.00 (s, 2H), 7.22-7.25 (m, 1H), 7.37 (dd, J 11.9, 4.2 Hz, 1H), 7.51-7.60 (m, 2H), 7.65 (s, 2H).
(clxii)	6-(2,6-dimethylpyridin-4-yl)-5-(4-(methoxythyl)phe nyl)-1,2,4-triazin-3-amine (32 mg, 32%)	6-bromo-5-(4-(methoxymethyl)phe nyl)-1,2,4-triazin-3-amine (90 mg, 0.305 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (71.1 mg, 0.305 mmol)	Mass spectroscopy: m/z 322.7 (M+H) ⁺ (ES ⁺); 320.9 (M-H) ⁻ (ES ⁻), at 3.72 min, 98.5% purity (method B).	(400 MHz, DMSO) δ: 2.36 (s, 6H), 3.28 (s, 3H), 4.44 (s, 2H), 7.03 (s, 2H), 7.31-7.34 (m, 2H), 7.37-7.43 (m, 2H), 7.62 (s, 2H).
(clxiii) *	4-(3-amino-6-(3-chloro-4-hydroxy-5-methoxyphenyl)-1,2,4-triazin-5-yl)benzotrile (10 gm, 10 %)	4-(3-amino-6-bromo-1,2,4-triazin-5-yl)benzotrile (75 mg, 0.272 mmol) and 2-chloro-6-methoxy-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenol (85 mg, 0.299 mmol)	Mass spectroscopy: m/z (CI) 354.2/356.0 (M+H) ⁺ (ES ⁺); 352.1/354.0 (M-H) ⁻ (ES ⁻), at 2.56 min, 94.6% purity (method B).	(400 MHz, DMSO) δ: 3.60 (s, 3H), 6.81 (d, J 2.0 Hz, 1H), 6.92 (d, J 2.0 Hz, 1H), 7.45 (s, 2H), 7.56-7.64 (m, 2H), 7.84-7.93 (m, 2H), 9.67 (s, 1H).
(clxiv) *	5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-chlorophenol (43 mg, 40%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 4-chloro-3-hydroxyphenylboroni c acid (61.8 mg, 0.358 mmol)	Mass spectroscopy: m/z 299, 301 (M+H) ⁺ (ES ⁺); 297, 299 (M-H) ⁻ (ES ⁻), at 2.55min, 99% purity (method B).	(400 MHz, DMSO) δ: 6.64 (dd, J = 8.2, 2.0 Hz, 1H), 7.07 (d, J = 2.0 Hz, 1H), 7.23 (d, J = 8.2 Hz, 1H), 7.34 7.47 (m, 7H), 10.26 (s, 1H).
(clxv)	6-[2-chloro-6-(trifluoromethyl)pyridi n-4-yl]-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (20 mg, 13%)	6-bromo-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (115 mg, 0.40 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridi ne (129 mg, 0.421 mmol)	Mass spectroscopy: m/z 387.84/389.77 [M+H] ⁺ (ES) ⁺ -99.70% at 4.60 min (method B).	(400 MHz DMSO) δ: 7.25-7.32 (m, 1H), 7.48-7.57 (q, 1H), 7.58-7.66 (m, 1H), 7.78(s, 1H), 7.82 (s, 1H), 7.93-7.99 (bs, 2H)

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(clxvi)	6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (26 mg, 17%)	6-bromo-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (115 mg, 0.40 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (129 mg, 0.421 mmol)	Mass spectroscopy: m/z 387.87/389.78 [M+H] ⁺ (ES) ⁺ 99.17% at 4.59min (method B).	(400 MHz DMSO) δ: 7.20-7.25 (m, 2H), 7.46-7.51 (m, 1H), 7.77 (s, 1H), 7.81 (s, 1H), 8.00 (bs, 2H)
(clxvii)	6-[2-(ethylamino)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (6 mg, 0.2%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine and 2-ethylamino-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine used crude from borylation step)	Mass spectroscopy: m/z 307.1 [M+H] ⁺ (ES) ⁺ 93.7% at 1.024min (method B).	(400MHz DMSO) δ: 1.03 (t, 3H), 2.18 (s, 3H), 3.94 (s, 2H), 6.28 (s, 1H), 6.34 (s, 1H) 7.37-7.50 (m, 5H).
(clxviii)	6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (16 mg, 11 %)	6-bromo-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (108 mg, 0.40 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (129 mg, 0.42 mmol)	Mass spectroscopy: m/z 370/372 (M+H) ⁺ (ES) ⁺ ; 368/370 (M-H) ⁻ (ES) ⁻ , at 3.83 min, 100% (method C).	(400 MHz, DMSO) δ: 7.24 (d, J7.5 Hz, 1 H), 7.33 - 7.43 (m, 2 H), 7.43 - 7.53 (m, 1 H), 7.76 (s, 1 H), 7.79 (s, 1H), 7.96 (bs, 2 H).
(clxix)	6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (13 mg, 9 %)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (108 mg, 0.40 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (129 mg, 0.42 mmol)	Mass spectroscopy: m/z 370/372 (M+H) ⁺ (ES) ⁺ ; 368/370 (M-H) ⁻ (ES) ⁻ , at 3.84 min, 100% (method C).	(400 MHz, DMSO) δ: 7.23 - 7.41 (m, 2 H), 7.46 - 7.65 (m, 2 H), 7.76 (s, 1H), 7.79 (1 H, s), 7.90 (bs, 2 H).
(clxx)	6-[2-[ethyl(methyl)amino]-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (16 mg, 10%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (126 mg, 0.5 mmol) and 2-ethyl(methyl)amino-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (276 mg, crude)	Mass spectroscopy: m/z 321 (M+H) ⁺ (ES) ⁺ , at 3.88 min, 100% (method C).	(400 MHz, DMSO) δ: 0.86 (t, J8 Hz, 3H) 2.25 (s, 3 H) 2.81 (s, 3 H) 4.11 (q, J8 Hz, 2 H) 6.17 (s, 1H) 6.49 (s, 1 H) 7.32 - 7.47 (m, 5 H) 7.50 (bs, 2 H).
(clxxi)	6-[2-(dimethylamino)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (13mg, 8%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (126 mg, 0.5 mmol) and crude 2-dimethylamino-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (234 mg, crude)	Mass spectroscopy: m/z 307 (M+H) ⁺ (ES) ⁺ , at 3.43 min, >99% (method C).	(400 MHz, DMSO) δ: 2.24 (s, 3 H) 2.86 (s, 6 H) 6.25 (s, 1 H) 6.46 (s, 1 H) 7.34-7.47 (m, 5 H) 7.47-7.57 (m, 2 H).
(clxxii)	1-[6-(2,6-d ₆ -dimethylpyridin-4-yl) 5-phenyl]-1,2,4-triazin-3-amine (13.3 mg, 4%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (310 mg, 1.24 mmol) and 1-[6-(2,6-d ₆ -dimethylpyridin-4-yl)-5-phenyl]-1,2,4-triazin-3-amine (crude, 1.17 g)	Mass spectroscopy: m/z 284.1 (M+H) ⁺ (ES) ⁺ at 2.48 min, 100% (method C).	(400 MHz, CDCl ₃) δ: 5.49 (s, 2H), 7.02 (s, 2H), 7.33-7.39 (m, 2H), 7.43-7.49 (m, 3H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(clxxiii)	6-[2-d ₃ -methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (28.5 mg, 12%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (178 mg, 0.71 mmol, and 2-(d ₃)methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (226 mg, 0.78 mmol)	Mass spectroscopy: m/z 335.1 (M+H) ⁺ (ES ⁺); 333.1 (M-H) ⁻ (ES ⁻) at 3.56 min, 100% (method C).	(400 MHz, CDCl ₃) δ: 5.57 (s, 2H), 7.37-7.52 (m, 7H).
(clxxiv)	5-(4-fluorophenyl)-6-[2-d ₃ -methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine (93.3 mg, 38%)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (189 mg, 0.70 mmol) and 2-(d ₃)methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (225 mg, 0.78 mmol)	Mass spectroscopy: m/z 353.1 (M+H) ⁺ (ES ⁺); 351.1 (M-H) ⁻ (ES ⁻) at 3.68 min, 100% (method C).	(400 MHz, CDCl ₃) δ: 5.57 (s, 2H), 7.06-7.12 (m, 2H), 7.45-7.50 (m, 3H), 7.51-7.53 (m, 1H).
(clxxv)	6-(2,6-dimethylpyridin-4-yl)-5-(2-fluorophenyl)-1,2,4-triazin-3-amine (32 mg, 57%)	6-bromo-5-(2-fluorophenyl)-1,2,4-triazin-3-amine (50 mg, 0.19 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-pyridine (68 mg, 0.29 mmol)	Mass spectroscopy: m/z 296.0 (M+H) ⁺ (ES ⁺), at 2.20 min, 100% (method C).	(400MHz, DMSO), δ: 2.31 (s, 6H), 6.93 (s, 2H), 7.18 (t, J 7.8, 1H), 7.37 (t, J 6.5, 1H), 7.54-7.66 (m, 6H)
(clxxvi)	6-(2-chloro-6-methylpyridin-4-yl)-5-(2-fluorophenyl)-1,2,4-triazin-3-amine (21 mg, 35%)	6-bromo-5-(2-fluorophenyl)-1,2,4-triazin-3-amine (50 mg, 0.19 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (74 mg, 0.29 mmol)	Mass spectroscopy: m/z 315.9 (M+H) ⁺ (ES ⁺), at 2.66 min, 100% (method C).	(400MHz, DMSO) δ: 2.31(s, 3H), 7.06 (s, 1H), 7.21 (t, J 7.8, 1H), 7.27 (s, 1H), 7.40 (t, J 6.5, 1H), 7.56-7.63 (m, 1H), 7.64-7.69 (m, 1H), 7.80-7.90 (bs, 2H)
(clxxvii)	6-(2,6-dimethylpyridin-4-yl)-5-(4-methoxyphenyl)-1,2,4-triazin-3-amine (20 mg, 36%)	6-bromo-5-(4-methoxyphenyl)-1,2,4-triazin-3-amine (50 mg, 0.18 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-pyridine (63 mg, 0.27 mmol)	Mass spectroscopy: m/z 308.0 (M+H) ⁺ (ES ⁺), at 2.31 min, 100% (method C).	(400MHz, DMSO) δ: 2.37 (s, 6H), 3.78 (s, 3H), 6.95 (d, J 9.0, 2H), 7.02 (s, 2H), 7.39 (d, J 9.0, 2H), 7.45-7.55 (bs, 2H)
(clxxviii)	6-(2-chloro-6-methylpyridin-4-yl)-5-(4-methoxyphenyl)-1,2,4-triazin-3-amine (10 mg, 17%)	6-bromo-5-(4-methoxyphenyl)-1,2,4-triazin-3-amine (50 mg, 0.18 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (68 mg, 0.27 mmol)	Mass spectroscopy: m/z 328.0 (M+H) ⁺ (ES ⁺), at 2.72 min, 100% (method C).	(400MHz, DMSO) δ: 2.42 (s, 3H), 3.80 (s, 3H) 6.98 (d, J 8.8, 2H), 7.18 (s, 1H), 7.31 (s, 1H), 7.41 (d, J 8.8, 2H), 7.37-7.43 (s, 2H)
(clxxix)	6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (42 mg, 32%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (100 mg, 0.40 mmol) and (2-(difluoromethyl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (108 mg, 0.40 mmol)	Mass spectroscopy: m/z 314.1 (M+H) ⁺ (ES ⁺), at 1.38 min, 100% (method A).	(400MHz, DMSO) δ: 2.46 (s, 3H), 6.83 (t, J 55.0, 1H), 7.33 (s, 1H), 7.38-7.45 (m, 5H), 7.47-7.52 (m, 1H), 7.62-7.75 (bs, 2H)

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(clxxx)	6-[2-chloro-6-(difluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (27 mg, 20%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (100 mg, 0.40 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(difluoromethyl)-pyridine (151 mg, 0.52 mmol)	Mass spectroscopy: m/z 333.9 (M+H) ⁺ (ES ⁺), at 1.56 min, 100% (method C).	(400MHz, DMSO) δ: 6.94 (t, J 54.5, 1H), 7.41-7.48(m, 4H), 7.50-7.56 (m, 1H), 7.57 (s, 1H), 7.62 (s, 1H)
(clxxxi)	6-[2-chloro-6-(fluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (13 mg, 10%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (100 mg, 0.40 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(fluoromethyl)-pyridine (141 mg, 0.52 mmol)	Mass spectroscopy: m/z 316.0 (M+H) ⁺ (ES ⁺), at 3.12 min, 100% (method C).	(400MHz, DMSO) δ: 5.43 (d, J 46.4, 2H), 7.33 (s, 1H), 7.41-7.46 (m, 5H), 7.47-7.53 (m, 3H)
(clxxxii)	6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (32 mg, 26%)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (100 mg, 0.37 mmol) and 2-(difluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (110 mg, 0.41 mmol)	Mass spectroscopy: m/z 332.0 (M+H) ⁺ (ES ⁺), at 1.42 min, 100% (method A).	(400MHz, DMSO) δ: 2.49(s, 3H), 6.82 (t, J 55.0Hz, 1H), 7.19-7.31 (m, 1H), 7.36 (s, 1H), 7.44 (s, 1H), 7.46-7.52 (m, 2H), 7.54-7.58 (, 2H)
(clxxxiii)	6-[2,6-bis(fluoromethyl)pyridine-4-yl]-5-phenyl-1,2,4-triazin-3-amine (10 mg, 8%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (100 mg, 0.40 mmol) and 2,6-bis-(fluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (140 mg, 0.52 mmol)	Mass spectroscopy: m/z 314.0 (M+H) ⁺ (ES ⁺), at 1.33 min, 95% (method A).	(400 MHz, DMSO) δ: 5.43 (d, J 46.9Hz, 4H), 7.38-7.45 (m, 6H), 7.47-7.51 (m, 1H), 7.65-7.75(bs, 2H).
(clxxxiv)	6-[2-(fluoromethyl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (10 mg, 8%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (100 mg, 0.40 mmol) and (2-(fluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (151 mg, 0.60 mmol)	Mass spectroscopy: m/z 296.0 (M+H) ⁺ (ES ⁺), at 2.58 min, 100% (method C).	(400MHz, DMSO) δ: 2.40(s, 3H), 5.37 (d, J 46.9Hz, 2H), 7.20 (s, 2H), 7.38-7.45 (m, 4H), 7.46-7.51 (m, 1H), 7.60-7.72 (bs, 2H)
(clxxxv)	6-(2-chloro-6-methylpyridin-4-yl)-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine (24 mg, 18%)	6-bromo-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine (115 mg, 0.40 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine(129 mg, 0.42mmol)	Mass spectroscopy: m/z 334.0 (M+H) ⁺ (ES ⁺); at 2.87 min, 95% (method C).	(400 MHz, DMSO) δ: 2.40 (s, 3H), 7.12 (s, 1H), 7.25-7.32 (m, 2H), 7.42 - 7.49 (m, 1H), 7.51 - 7.56 (m, 1H), 7.89 (br s, 2H).
(clxxxvi)	6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(2-fluorophenyl)-1,2,4-triazin-3-amine (18 mg, 12%)	6-bromo-5-(2-fluorophenyl)-1,2,4-triazin-3-amine (108 mg, 0.40 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (129 mg, 0.42mmol)	Mass spectroscopy: m/z 368.1 (M+H) ⁺ (ES ⁺), 370 (M-H) ⁻ (ES ⁻); at 3.85min, 95% (method C).	(400 MHz, DMSO) δ: 7.20-7.26 (m, 1H), 7.38 - 7.45 (m, 1H), 7.56 - 7.74 (m, 3H), 7.78 (s, 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(clxxxvii)	6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine (17 mg, 11%)	6-bromo-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine (115 mg, 0.40 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (129 mg, 0.42 mmol)	Mass spectroscopy: m/z 386.1 (M-H) ⁻ (ES ⁻); at 3.93 min, 95% (method C).	(400 MHz, DMSO) δ: 7.27 - 7.35 (m, 1H), 7.45 - 7.52 (m, 1H), 7.52 - 7.58 (m, 1H), 7.79 (s, 1H), 7.82 (s, 1H), 8.08 (bs, 2H).
(clxxxviii)	6-[2-cyclopropyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (20 mg, 26%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (50 mg, 0.20 mmol) and 2-cyclopropyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (66 mg, 0.21 mmol)	Mass spectroscopy: m/z 358 (M+H) ⁺ (ES ⁺); at 4.43 min, 100% (method C).	(400 MHz, DMSO) δ: 0.79 - 0.84 (m, 2H), 0.97 - 1.03 (m, 2H), 2.10 - 2.17 (m, 1H), 7.39 - 7.46 (m, 6H), 7.47 - 7.53 (m, 1H), 7.61 (bs, 2H).
(clxxxix)	6-[2-ethyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (37 mg, 55%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (50 mg, 0.20 mmol) and 2-ethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (63 mg, 0.21 mmol)	Mass spectroscopy: m/z 346.0 (M+H) ⁺ (ES ⁺), 344.2 (M-H) ⁻ (ES ⁻); at 4.08 min, 100% (method C).	(400 MHz, DMSO) δ: 1.10 (t, 3H, J8.0 Hz), 2.75 (q, 2H, J8.0), 7.40 - 7.44 (m, 4H), 7.47 - 7.53 (m, 2H), 7.57 (s, 1H), 7.76 (bs, 2H).
(cx)	6-(2-cyclopropyl-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (32 mg, 46%)	6-(2-chloro-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (70 mg, 0.23 mmol) and cyclopropyltrifluoroborate potassium salt (340 mg, 2.30 mmol)	Mass spectroscopy: m/z 304.1 (M+H) ⁺ (ES ⁺); at 3.22 min, 100% (method C).	(400 MHz, DMSO) δ: 0.70-0.76 (m, 2H), 0.82 - 0.89 (m, 2H), 1.88 - 1.97 (m, 1H), 2.32 (s, 3H), 6.88 (s, 1H), 6.97 (s, 1H), 7.38 - 7.43 (m, 4H), 7.45 - 7.52 (m, 1H), 7.54 - 7.62 (bs, 2H).
(cxci)	5-(2-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine (65.3 mg, 47%)	6-bromo-5-(2-fluorophenyl)-1,2,4-triazin-3-amine (108 mg, 0.40 mmol) and 2-methyl-6-trifluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (121 mg, 0.42 mmol)	Mass spectroscopy: m/z 350.0 (M+H) ⁺ (ES ⁺) at 3.30 min, -98% (method C).	(400 MHz, DMSO) δ: 2.51 (s, 3H), 7.17-7.22 (m, 1H), 7.38-7.42 (m, 2H), 7.56-7.63 (m, 2H), 7.67-7.71 (m, 1H), 7.88 (bs, 2H).
(cxcii)	5-(3-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine (72.8 mg, 52%)	6-bromo-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (108 mg, 0.40 mmol) and 2-methyl-6-trifluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (121 mg, 0.42 mmol)	Mass spectroscopy: m/z 350.0 (M+H) ⁺ (ES ⁺) at 3.24 min, -98% (method C).	(400 MHz, CDCl ₃) δ: 2.61 (s, 3H), 5.62 (bs, 2H), 7.10-7.20 (m, 1H), 7.18-7.23 (m, 1H), 7.28-7.35 (m, 2H), 7.48-7.50 (m, 2H).
(cxciii)	5-(4-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine (78.9 mg, 56%)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (108 mg, 0.40 mmol) and 2-methyl-6-trifluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (121 mg, 0.42 mmol)	Mass spectroscopy: m/z 350.0 (M+H) ⁺ (ES ⁺) at 3.26 min, 98% (method C).	(400 MHz, CDCl ₃) δ: 2.61 (s, 3H), 5.58 (bs, 2H), 7.07-7.11 (m, 2H), 7.46-7.52 (m, 4H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cxciv)	5-(2,5-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridi n-4-yl]-1,2,4-triazin-3-amine (61.7 mg, 42%)	6-bromo-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine (115 mg, 0.40 mmol) and 2-methyl-6-trifluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (121 mg, 0.42 mmol)	Mass spectroscopy: m/z 368.0 (M+H) ⁺ (ES ⁺) at 3.38 min, 98% (method C).	(400 MHz, DMSO) δ : 2.53 (s, 3H), 7.25-7.30 (m, 1H), 7.44-7.50 (m, 2H), 7.55-7.59 (m, 1H), 7.65 (s, 1H), 7.95 (bs, 2H).
(cxcv)	5-(3,4-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridi n-4-yl]-1,2,4-triazin-3-amine (40.0 mg, 27%)	6-bromo-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine (115 mg, 0.40 mmol) and 2-methyl-6-trifluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (121 mg, 0.42 mmol)	Mass spectroscopy: m/z 368.0 (M+H) ⁺ (ES ⁺) at 4.34 min, 100% (method B).	(400 MHz, DMSO) δ : 2.54 (s, 3H), 7.22-7.24 (m, 1H), 7.46-7.57 (m, 3H), 7.62 (s, 1H), 7.81 (bs, 2H).
(cxcvi)	5-(3,5-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridi n-4-yl]-1,2,4-triazin-3-amine (73.3 mg, 49%)	6-bromo-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine (115 mg, 0.40 mmol) and 2-methyl-6-trifluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (121 mg, 0.42 mmol)	Mass spectroscopy: m/z 368.0 (M+H) ⁺ (ES ⁺) at 3.53 min, -98% (254 nm).	(400 MHz, DMSO) δ : 2.54 (s, 3H), 7.16-7.19 (m, 2H), 7.42-7.49 (m, 2H), 7.64 (s, 1H), 7.81 (bs, 2H).
(cxcvii)	6-[2-(azetidin-1-yl)-6-(trifluoromethyl)pyridi n-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (40.2 mg, 18%)	6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (150 mg, 0.56 mmol) and 2-(azetid-1-yl)-6-trifluoromethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (192 mg, 0.59 mmol)	Mass spectroscopy: m/z 391.0 (M+H) ⁺ (ES ⁺) at 3.89 min, ~98% (method C).	(400 MHz, CDCl ₃) δ : 2.27 - 2.35 (quint., J 7.4, 2H), 3.89 (t, J 7.4, 4H), 5.52 (bs, 2H), 6.54 (s, 1H), 6.83 (s, 1H), 7.06 - 7.10 (m, 2H), 7.49 - 7.53 (m, 2H).
(cxcviii)	6-[2-methyl-6-(morpholine-4-yl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (43.0 mg, 12%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (251 mg, 1.0 mmol) and 2-methyl-6-(morpholin-4-yl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (320 mg, 1.05 mmol)	Mass spectroscopy: m/z 349.1 (M+H) ⁺ (ES ⁺) at 1.16 min, -95% (method B).	(400 MHz, CDCl ₃) δ : 2.33 (s, 3H), 3.39 - 3.42 (m, 2H), 3.76 - 3.78 (m, 2H), 5.49 (bs, 2H), 6.52 (s, 1H), 6.55 (s, 1H), 7.34 - 7.38 (m, 2H), 7.43 - 7.45 (m, 1H), 7.50 - 7.52 (m, 2H).
(cxcix)	6-(2-chloro-6-methylpyridin-4-yl)-5-(4-ethylphenyl)-1,2,4-triazin-3-amine (6 mg, 6%)	6-bromo-5-(4-methylphenyl)-1,2,4-triazin-3-amine (94 mg, crude - assume 0.17 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (128 mg, 0.506 mmol)	Mass spectroscopy: m/z 324.2 (M-H) ⁻ (ES ⁻) at 2.16 min, 97% (method B)	(400 MHz, DMSO) δ : 1.18 (t, 3H), 2.40 (s, 3H), 2.64 (q, 2H), 7.22 (s, 1H), 7.55 (m, 3H), 7.38 (m, 2H) (NH ₂ not observed)

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(cc)	5-(2,5-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine (12 mg, 12%)	6-bromo-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine (90 mg, 0.314 mmol) and 2,6-dimethyl-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (110 mg, 0.47 mmol)	Mass spectroscopy: m/z 314.3 (M+H) ⁺ (ESI ⁺) at 0.97 min, 100% (method B)	(400 MHz, DMSO) δ : 2.34 (s, 6H), 6.98 (s, 2H), 7.26 (m, 1H), 7.44 (m, 1H), 7.54 (m, 1H), 1.78 (bs, 2H)
(ccii)	6-(2,6-dimethylpyridin-4-yl)-5-(4-methylphenyl)-1,2,4-triazin-3-amine (16 mg, 17%)	6-bromo-5-(4-methylphenyl)-1,2,4-triazin-3-amine (85 mg, 0.32 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (112 mg, 0.48 mmol)	Mass spectroscopy: m/z 293.3 (M+H) ⁺ (ESI ⁺) at 1.06 min, 99% (method B)	(400 MHz, DMSO) δ : 2.31 (s, 3H), 2.36 (s, 6H), 6.99 (s, 2H), 7.20 (m, 2H), 7.33 (m, 2H), 7.53 (bs, 2H)
(cciii)	6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (17 mg, 20%)	6-bromo-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (70 mg, 0.26 mmol) and 2-(difluoromethyl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (70 mg, 0.26 mmol)	Mass spectroscopy: m/z 332.3, M ⁺ (ESI ⁺) at 1.84 min, 96% (method B)	(400 MHz, CDCl ₃) δ : 2.51 (s, 3H), 5.51 (bs, 2H), 6.55 (t, 1H), 7.13 (m, 1H), 7.29 (m, 1H), 7.32 (m, 1H), 7.40 (s, 1H), 7.44 (s, 1H)
(cciv) *	6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-(2-fluorophenyl)-1,2,4-triazin-3-amine (20 mg, 23%)	6-bromo-5-(3-fluorophenyl)-1,2,4-triazin-3-amine (70 mg, 0.26 mmol) and 2-(difluoromethyl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (70 mg, 0.26 mmol)	Mass spectroscopy: m/z 332.3, M ⁺ (ESI ⁺) at 1.80 min, 96% (method B)	(400 MHz, CDCl ₃) δ : 2.55 (s, 3H), 5.54 (bs, 2H), 6.51 (t, 1H), 7.00 (m, 1H), 7.30 (s, 1H), 7.32 (m, 1H), 7.43 (s, 1H), 7.50 (m, 1H), 7.58 (m, 1H)
(ccv) *	6-(3,5-dichlorophenyl)-5-(pyridin-2-yl)-1,2,4-triazin-3-amine (23 mg, 7%)	6-bromo-5-(pyridin-2-yl)-1,2,4-triazin-3-amine (0.25 g, 0.99 mmol) and 3,5-dichlorophenylboronic acid (0.20 g, 1.09 mmol)	HPLC purity: 98.56%; (268 nm). Mass spectroscopy: (ESI +ve) 318.0 [M+H] ⁺ , 316.1 [M+H] ⁺ .	(400 MHz, DMSO) δ : 7.26 (m, 2H), 7.49 (m, 1H), 7.54 (m, 1H), 7.68 (bs, 2H), 7.91 (m, 1H), 8.00 (t, 1H), 8.43 (d, 1H)
(ccvi) *	6-(3-chloro-5-methylphenyl)-5-(pyridin-2-yl)-1,2,4-triazin-3-amine (12 mg, 5%)	6-bromo-5-(pyridin-2-yl)-1,2,4-triazin-3-amine (0.20 g, 0.79 mmol) and 3-chloro-5-methylphenylboronic acid (0.175 g, 1.03 mmol)	HPLC purity: 99.60%; (266 nm). Mass spectroscopy: (ESI +ve) 298.2 [M+H] ⁺ .	(400 MHz, DMSO) δ : 2.22 (s, 3H), 6.99 (s, 1H), 7.07 (s, 1H), 7.18 (s, 1H), 7.45-7.48 (m, 1H), 7.56 (bs, 2H), 7.79 (d, 1H), 7.94-7.98 (m, 1H), 8.44 (d, 1H)
(ccvii)	6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (50 mg, 5%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.70 g, 2.8 mmol) and 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (1.02 g, 3.34 mmol)	HPLC purity: 96.75% (272 nm) Mass spectroscopy: (ESI +ve) 352.1 [M+H] ⁺ .	¹H NMR: (400 MHz, DMSO) δ : 7.44 (m, 5H), 7.69 (s, 1H), 7.88 (s, 1H), 7.84 (bs, 2H)

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(ccvii)	6-[2,6-bis(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (0.10 g, 13%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.52 g, 2.07 mmol) and 2,6-bis(trifluoromethyl)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (1.0 g, 3.1 mmol)	HPLC purity: 98.90% (232 nm) Mass spectroscopy: (ESI +ve) 386.1 [M+H] ⁺ , (ESI -ve) 384.2 [M-H] ⁻ .	¹H NMR: (400 MHz, DMSO) δ : 7.48 (m, 5H), 7.93 (bs, 2H), 8.03 (s, 2H).
(ccviii) *	6-[3-chloro-5-(trifluoromethyl)phenyl]-5-(pyridin-2-yl)-1,2,4-triazin-3-amine (30 mg, 10%)	6-bromo-5-(pyridin-2-yl)-1,2,4-triazin-3-amine (0.225 g, 0.89 mmol) and 3-chloro-5-(trifluoromethyl)-phenylboronic acid (0.260 g, 1.16 mmol)	HPLC purity: 99.87%; (268 nm). Mass spectroscopy: (ESI +ve) 352.1 [M+H] ⁺ .	(400 MHz, DMSO) δ : 7.45-7.48 (m, 2H), 7.65 (s, 1H), 7.70 (bs, 2H), 7.77 (s, 1H), 7.91 (m, 1H), 8.0 (m, 1H), 8.36 (d, 1H).
(ccix)	6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (0.32 g, 35%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.70 g, 2.78 mmol) and 2-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-trifluoromethylpyridine (1.2 g, 4.1 mmol)	HPLC purity: 98.81% (269 nm) Mass spectroscopy: (ESI +ve) 332.0 [M+H] ⁺ , (ESI -ve) 330.2 [M-H] ⁻ .	(400 MHz, DMSO) δ : 2.48 (s, 3H), 7.38 (m, 5H), 7.47 (s, 1H), 7.58 (s, 1H), 7.73 (bs, 2H).
(ccx) *	6-(3,5-dimethylphenyl)-5-(pyridin-2-yl)-1,2,4-triazin-3-amine (16 mg, 7%)	6-bromo-5-(pyridin-2-yl)-1,2,4-triazin-3-amine (0.20 g, 0.79 mmol) and 3,5-dimethylphenylboronic acid (0.15 g, 1.02 mmol)	HPLC purity: 98.96%; (268 nm). Mass spectroscopy: (ESI +ve) 277.9 [M+H] ⁺ .	(400 MHz, DMSO) δ : 2.12 (s, 6H), 6.81 (s, 2H), 6.88 (s, 1H), 7.40-7.43 (m, 3H), 7.64-7.66 (m, 1H), 7.89 (m, 1H), 8.43 (m, 1H).
(ccxi)	6-[2-(dimethylamino)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (83 mg, 33%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.5 g, 1.99 mmol) and 2-dimethylamino-4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (0.98 g, 3.9 mmol)	HPLC purity: 99.18 % (272 nm) Mass spectroscopy: (ESI +ve) 292.8 [M+H] ⁺ .	(400 MHz, DMSO) δ : 2.97 (s, 6H), 6.46 (m, 1H), 6.56 (m, 1H), 7.37-7.47 (m, 5H), 7.54 (bs, 2H), 7.99 (m, 1H).
(ccxii)	6-(2-bromo-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (76 mg, 22%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.25 g, 0.90 mmol) and 2-bromo 4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (0.44 g, 1.4 mmol)	HPLC purity: 98.71 % (272 nm) Mass spectroscopy: (ESI +ve) 341.9 [M] ⁺ , 343.9 [M] ⁺ .	(400 MHz, DMSO) δ : 2.38 (s, 3H), 7.25 (s, 1H), 7.30 (s, 1H), 7.47 (m, 5H), 7.72 (bs, 2H).
(ccxiii)	6-(2,6-dimethyl-1-oxidopyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (87 mg, 15%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.50 g, 1.99 mmol) and 2,6-dimethyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine-N-oxide (0.74 g, 2.98 mmol)	HPLC purity: 98.85 % (294 nm) Mass spectroscopy: (ESI +ve) 293.7 [M+H] ⁺ , (ESI -ve) 292.0 [M-H] ⁻ .	(400 MHz, CDCl ₃) δ : 2.48 (s, 6H), 5.66 (bs, 2H), 7.24 (s, 1H), 7.28 (s, 1H), 7.49 (m, 2H), 7.52 (m, 3H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(ccxiv)	4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-6-methylpyridine-2-carbonitrile (140 mg, 49%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.25 g, 0.99 mmol) and 2-cyano-4-(4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (0.36 g, 1.4 mmol)	HPLC purity: 99.18 % (272 nm) Mass spectroscopy: (ESI +ve) 288.9 [M+H] ⁺ .	(400 MHz, DMSO) δ : 2.48 (s, 3H), 7.45-7.52 (m, 5H), 7.61 (s, 1H), 7.63 (s, 1H), 7.79 (bs, 2H).
(ccxv) *	6-(3,5-dichlorophenyl)-5-(pyridin-3-yl)-1,2,4-triazin-3-amine (3 mg, 1%)	6-bromo-5-(pyridin-3-yl)-1,2,4-triazin-3-amine (0.3 g, 1.19 mmol) and 3,5-dichlorophenylboronic acid (0.22 g, 1.19 mmol)	HPLC purity: 98.66% (266 nm) Mass spectroscopy: (ESI +ve) 317.9 [M+H] ⁺ . 315.9 [M+H] ⁻ .	(400 MHz, DMSO) δ : 7.39 (m, 2H), 7.42-7.46 (m, 1H), 7.62 (m, 1H), 7.69 (bs, 2H), 7.82 (m, 1H), 8.59 (m, 1H), 8.63 (m, 1H).
(ccxvi) *	6-(3-chloro-5-methylphenyl)-5-(pyridin-3-yl)-1,2,4-triazin-3-amine (11 mg, 5%)	6-bromo-5-(pyridin-3-yl)-1,2,4-triazin-3-amine (0.19 g, 0.75 mmol) and 3-chloro-5-methylphenylboronic acid (0.166 g, 0.98 mmol)	HPLC purity: 92.24% (218 nm) Mass spectroscopy: (ESI +ve) 297.9 [M+H] ⁺ . 295.9 [M+H] ⁻ .	(400 MHz, DMSO) δ : 2.25 (s, 3H), 6.82 (s, 1H), 7.15-7.17 (m, 1H), 7.2 (s, 1H), 7.40 (m, 1H), 7.59 (bs, 2H), 7.77 (m, 1H), 8.56 (m, 1H), 8.61 (m, 1H).
(ccxvii) *	6-(3,5-dichlorophenyl)-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine (40 mg, 6%)	6-bromo-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine (0.5 g, 1.98 mmol) and 3,5-dichlorophenylboronic acid (0.414 g, 2.18 mmol)	HPLC purity: 97.14% (210 nm) Mass spectroscopy: (ESI +ve) 318.9 [M+H] ⁺ . 316.9 [M+H] ⁻ .	(400 MHz, DMSO) δ : 7.21 (s, 2H), 7.58 (s, 1H), 7.65 (t, 1H), 7.84 (bs, 2H), 8.93 (d, 2H).
(ccxviii) *	6-[3-chloro-5-(trifluoromethyl)phenyl]-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine (0.130 g, 19%)	6-bromo-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine (0.50 g, 1.98 mmol) and 3-chloro-5-(trifluoromethyl)phenylboronic acid (0.488 g, 2.18 mmol)	HPLC purity: 93.30% (202 nm) Mass spectroscopy: (ESI +ve) 353.0 [M+H] ⁺ . 351.0 [M+H] ⁻ .	(400 MHz, DMSO) δ : 7.38 (s, 1H), 7.64 (m, 2H), 7.86 (m, 3H), 8.91 (d, 2H).
(ccxix)	6-[2-bromo-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (30 mg, 8%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.25 g, 0.9 mmol) and 2-bromo-4-(4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (0.52 g, 1.48 mmol)	HPLC purity: 94.90 % (272 nm) Mass spectroscopy: (ESI +ve) 396.1 [M+H] ⁺ . 397.9 [M+H] ⁻ .	(400 MHz, DMSO) δ : 7.47 (m, 5H), 7.74 (s, 1H), 7.84 (s, 1H), 7.88 (bs, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(ccxx) *	6-[3-chloro-5-(trifluoromethyl)phenyl]-5-(pyridin-3-yl)-1,2,4-triazin-3-amine (8 mg, 3%)	6-bromo-5-(pyridin-3-yl)-1,2,4-triazin-3-amine (0.20 g, 0.79 mmol) and 3-chloro-5-(trifluoromethyl)phenylboronic acid (0.21 g, 0.95 mmol)	HPLC purity: 91.22% (266 nm) Mass spectroscopy: (ESI +ve) 351.8 [M+H] ⁺ . 349.9 [M+H] ⁻	(400 MHz, DMSO) δ : 7.41 (m, 1H), 7.62 (s, 1H), 7.72 (bs, 2H), 7.76-7.80 (m, 2H), 7.87 (s, 1H), 8.58 (m, 1H), 8.62-8.64 (m, 1H).
(ccxxi) *	6-(3-chloro-5-methylphenyl)-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine (130 mg, 22%)	6-bromo-5-(pyrimidin-2-yl)-1,2,4-triazin-3-amine (0.5 g, 1.98 mmol) and 3-chloro-5-methylphenylboronic acid (0.650 g, 2.18 mmol)	HPLC purity: 95.27% (266 nm) Mass spectroscopy: (ESI +ve) 299.0 [M+H] ⁺ .	(400 MHz, DMSO) δ : 2.21 (3H, s), 6.98 (m, 2H), 7.21 (s, 1H), 7.62 (t, 1H), 7.74 (s, 2H), 8.90 (d, 2H)

[0291] The following compounds were prepared according to a modified version of the general procedure described for Example 1. In these cases, the reactions were run using using palladium acetate (1.5 mol%), dppf (3.0 mol%), copper bromide (1.5 eq.), caesium carbonate (2.0 eq.) and DMF (0.8 mL).

No.	Product (yield)	Prepared From	LCMS	NMR
(ccxxii) *	6-(6-chloropyridin-2-yl)-5-phenyl-1,2,4-triazin-3-amine (7 mg, 6%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (100 mg, 0.398 mmol), 6-chloropyridin-2-ylboronic acid (141 mg, 0.896 mmol)	Mass spectroscopy: m/z 284.7 (M+H) ⁺ (ES ⁺), at 3.75 min, 99.2% purity (method B).	(400 MHz, DMSO) δ: 7.31 - 7.39 (m, 4H), 7.39 - 7.46 (m, 1H), 7.47 (dd, J = 8.0, 0.8 Hz, 1H), 7.66 (s, 2H), 7.77 (dd, J = 7.6, 0.8 Hz, 1H), 7.95 (t, J = 7.8 Hz, 1H).
(ccxxiii) *	6-(4-cyclopropylpyridin-2-yl)-5-phenyl-1,2,4-triazin-3-amine (3 mg, 5%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (50 mg, 0.199 mmol), and 4-cyclopropyl-2-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (110 mg, 0.448 mmol),	Mass spectroscopy: m/z 290.6 (M+H) ⁺ (ES ⁺); 288.9 (M-H) ⁻ (ES ⁻), at 3.93 min, 99.4% purity (method B).	(400 MHz, CDCl ₃) δ: 0.89- 1.01 (m, 4H), 1.97 - 2.06 (m, 1H), 5.50 (s, 2H), 6.98 (dd, J = 5.2, 1.7 Hz, 1H), 7.26 - 7.29 (m, 1H), 7.33 - 7.41, (m, 2H), 7.43 - 7.50 (m, 3H), 8.35 (d, J = 4.8 Hz, 1H).
(ccxxiv) *	5-phenyl-6-(6-(trifluoromethyl)pyridin-2-yl)-1,2,4-triazin-3-amine (27 mg, 29%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (100 mg, 0.398 mmol), 2-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (245 mg, 0.896 mmol)	Mass spectroscopy: m/z 318.6 (M+H) ⁺ (ES ⁺); 316.9 (M-H) ⁻ (ES ⁻), at 4.09 min, 98.9% purity (method B).	(400 MHz, DMSO) δ: 7.27 - 7.35 (m, 4H), 7.36-7.44 (m, 1H), 7.69 (s, 2H), 7.84 (dd, J 7.4, 1.3 Hz, 1H), 8.11 - 8.23 (m, 2H).
(ccxxv) *	5-phenyl-6-(4-(trifluoromethyl)pyridin-2-yl)-1,2,4-triazin-3-amine (10 mg, 8%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (100 mg, 0.398 mmol), 2-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-4-(trifluoromethyl)pyridine (245 mg, 0.896 mmol)	Mass spectroscopy: m/z 318.7 (M+H) ⁺ (ES ⁺); 316.9 (M-H) ⁻ (ES ⁻), at 4.12 min, 98.5% purity (method B).	(400 MHz, DMSO) δ: 7.26 - 7.38 (m, 4H), 7.38- 7.45 (m, 1H), 7.69 (s, 2H), 7.74 (dd, J 5.1, 1.1 Hz, 1H), 8.18 (s, 1H), 8.63 (d, J 5.1 Hz, 1H).
(ccxxvi) *	6-(6-cyclopropylpyridin-2-yl)-5-phenyl-1,2,4-triazin-3-amine (2 mg, 3%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (50 mg, 0.199 mmol), 2-cyclopropyl-6-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine (110 mg, 0.448 mmol)	Mass spectroscopy: m/z 290.3 (M+H) ⁺ (ES ⁺), at 1.85 min, 98.4% purity (method B).	(400 MHz, CDCl ₃) δ: 0.21 - 0.32 (m, 2H), 0.55 - 0.64 (m, 2H), 1.77 (tt, J 8.1, 4.7 Hz, 1H), 5.41 (s, 2H), 7.11 (dd, J 7.7, 1.0 Hz, 1H), 7.28 - 7.42 (m, 5H), 7.61 - 7.68 (m, 1H), 7.75 (dd, J 7.7, 1.0 Hz, 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(ccxxvii) *	5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)pyrazin-2-ol (2 mg, 2%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (80 mg, 0.319 mmol), 5(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)pyrazin-2-ol (159 mg, 0.717 mmol),	Mass spectroscopy: m/z 267.2 (M+H) ⁺ (ES ⁺), at 1.52 min, 96.4% purity (method B).	(400 MHz, CDCl ₃) δ: 5.34 (s, 2H), 7.42-7.52 (m, 3H), 8.03-8.09 (m, 3H), 8.31 (d, J 2.6 Hz, 1H), 8.57 (d, J 7.5 Hz, 1H).

Alternative Procedure for the Preparation of 5,6-Biaryl-3-amino-1,2,4-triazines

[0292] The Suzuki reaction to form 5,6-biaryl-3-amino-1,2,4-triazines may alternatively be performed with palladium-containing catalysts such as dichlorobis(di-*tert*-butyl(4-dimethylaminophenyl)phosphino)palladium(II) or dichloro[1,1'-bis(di-*tert*-butylphosphino)]ferrocene palladium(II). Residual palladium species may then be removed from a solution of the triazine by treatment with a suitable scavenging agent, such as mercaptopropyl-funtionalised silica (Quadrasil-MP; available from Johnson Matthey) or macroporous polystyrene-bound 2,4,6-trimercaptotriazine (MP-TMT; available from Biotage).

Typical alternative to the general procedure, as exemplified with Example 1 (xcv):

[0293] 6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (1 molar eq.), 2-chloro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-methylpyridine (1 molar eq.) and K₂CO₃ (1.5 molar eq.) are suspended in a mixture of 1,4-dioxane and water (2:1; 10 mL of solvent per gram of bromotriazine). The resulting mixture is degassed, treated with dichlorobis(di-*tert*-butyl(4-dimethylaminophenyl)phosphino)palladium(II) (2 mol%) and refluxed until full consumption of bromotriazine is observed by LCMS. The cooled reaction mixture is then diluted with water, extracted with DCM and passed through a phase separator. The organic phase is concentrated under reduced pressure and purified by gradient flash chromatography, eluting with mixtures of ethyl acetate and hexanes to afford 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (61%).

Typical alternative to general procedure, as exemplified with Example 1 (ccix):

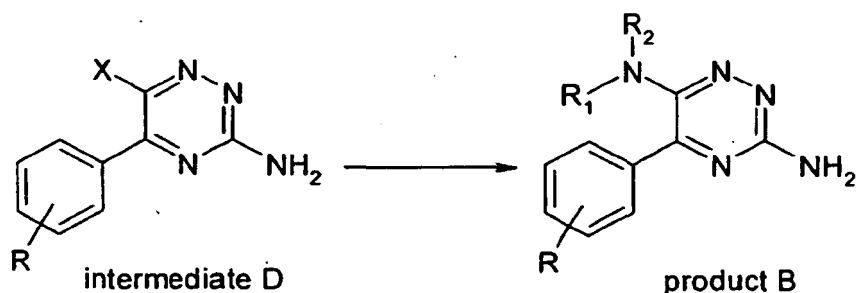
[0294] 6-bromo-5-phenyl-1,2,4-triazin-3-amine (1 molar eq.), 2-methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-6-(trifluoromethyl)pyridine (1 molar eq.) and K₂CO₃ (1.5 molar eq.) are suspended in a mixture of 1,4-dioxane and water (2:1; 10 mL of solvent per gram of bromotriazine). The resulting mixture is degassed, treated with dichlorobis(di-*tert*-butyl(4-dimethylaminophenyl)phosphino)palladium(II) (2 mol%) and refluxed until full consumption of bromotriazine is observed by LCMS. The cooled reaction mixture is then diluted with water, extracted with DCM and passed through a phase separator. The organic phase is concentrated under reduced pressure and purified by gradient flash chromatography, eluting with mixtures of ethyl acetate and hexanes to afford 6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (90%).

General Procedure for the Removal of Palladium Contaminants from 5,6-Biaryl-3-amino-1,2,4-triazines

[0295] A solution of a 5,6-biaryl-3-amino-1,2,4-triazine derivative (100 mg) in DCM (1.5 mL) is treated with Quadrasil-MP (42 mg) or MP-TMT (35 mg). The resulting mixture is heated to 50 °C for up to 24 hours then filtered. The filtrate is then concentrated under reduced pressure and the procedure repeated, if necessary. Quadrasil-MP is available from Johnson Matthey, MP-TMT is available from Biotage.

Reference Example 2

[0296]



General procedure for the Preparation of 5-Aryl-3,6-diamino-1,2,4-triazines

[0297] Intermediate D, a 6-halo-5-aryl-1,2,4-triazin-3-amine derivative (0.80 mmol) is dissolved in dioxane or *N*-methyl-2-pyrrolidone (5 mL) and treated with an amine (1.60 mmol) and an aqueous solution of K_2CO_3 (0.22 g, 1.60 mmol in 0.5 mL water). The mixture is heated in a microwave for two hrs at 140 °C with TLC monitoring (hexane/ethyl acetate, 1:1). After completion of the reaction the mixture is poured into water (50 mL) and extracted with ethyl acetate (2 x 100 mL). The organic layers are combined, dried over Na_2SO_4 and concentrated *in vacuo*. The crude compound, product B, is purified by gradient flash chromatography or preparative HPLC.

(i) 5-Phenyl-6-(piperidin-1-yl)-1,2,4-triazin-3-amine

[0298] 5-Phenyl-6-(piperidin-1-yl)-1,2,4-triazin-3-amine (18 mg, 18%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and piperidine (0.14 g, 1.60 mmol) according to the general procedure of Example 2.

HPLC purity: 96.95 % (264 nm)

Mass spectroscopy: (ESI +ve) 256.0 $[M+H]^+$

1H NMR: (400 MHz, $CDCl_3$) δ : 1.56-1.62 (m, 6H), 3.03 (m, 4H), 4.89 (s, 2H), 7.44-7.55 (m, 3H), 8.12 (m, 2H).

(ii) 6-(Morpholin-4-yl)-5-phenyl-1,2,4-triazin-3-amine

[0299] 6-(Morpholin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (50 mg, 20%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and morpholine (0.126 g, 1.44 mmol) according to the general procedure of Example 2.

HPLC purity: 94.87% (265 nm)

Mass spectroscopy: (ESI +ve) 257.9 $[M+H]^+$

1H NMR: (400 MHz, $CDCl_3$) δ : 2.88 (t, 4H), 3.59 (t, 4H), 6.75 (s, 2H), 7.54 (m, 3H), 8.06 (m, 2H).

(iii) 6-(3-Methylpiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine

[0300] 6-(3-Methylpiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine (30 mg, 14%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and 3-methylpiperidine (0.21 g, 1.92 mmol) according to the general procedure of Example 2.

HPLC purity: 98.87% (215 nm)

Mass spectroscopy: (ESI +ve) 270.0 $[M+H]^+$

1H NMR: (400 MHz, $CDCl_3$) δ : 0.75 (d, 3H), 0.97 (m, 1H), 1.45 (m, 2H), 1.65 (m, 2H), 2.20 (m, 2H), 3.14 (m, 2H), 6.65 (s, 2H), 7.49 (m, 3H), 8.04 (m, 2H).

(iv) 6-(2,6-Dimethylmorpholin-4-yl)-5-phenyl-1,2,4-triazin-3-amine

[0301] 6-(2,6-Dimethylmorpholin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (35 mg, 10%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 2,6-dimethylmorpholine (0.27 g, 2.39 mmol) according to the general procedure of Example 2.

HPLC purity: 90% (271 nm)

Mass spectroscopy: (ESI +ve) 286.0 $[M+H]^+$

1H NMR: (400 MHz, $CDCl_3$) δ : 1.10 (s, 6H), 2.52 (t, 2H), 3.23 (d, 2H), 3.71 (m, 2H), 5.06 (b, 2H), 8.07 (m, 3H), 8.07 (d, 2H).

(v) 6-(4,4-Difluoropiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine

[0302] 6-(4,4-Difluoropiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine (39 mg, 14%) was prepared from 6-chloro-5-phenyl-1,2,4-triazin-3-amine (0.21 g, 0.80 mmol) and 4,4-difluoropiperidine (0.21 g, 1.60 mmol) according to the general procedure of Example 2.

nyl-1,2,4-triazin-3-amine (0.20 g, 0.96 mmol), K_2CO_3 (0.23 g, 1.67 mmol) and 4,4-difluoropiperidine hydrochloride (0.22 g, 1.45 mmol) according to the general procedure of Example 2.

HPLC purity: 98.48% (262 nm)

Mass spectroscopy: (ESI +ve) 292.0 [M+H]⁺

¹H NMR: (400 MHz, $CDCl_3$) δ : 1.97 (m, 4H), 3.04 (m, 4H), 6.76 (s, 2H), 7.51 (m, 3H), 8.06 (m, 2H).

(vi) 6-(3,3-Dimethylpiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine

[0303] 6-(3,3-Dimethylpiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine (54 mg, 10%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.50 g, 1.99 mmol) and 3,3-dimethylpiperidine (0.27 g, 2.39 mmol) according to the general procedure of Example 2.

HPLC purity: 88% (274 nm)

Mass spectroscopy: (ESI +ve) 284.1 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 0.89 (s, 6H), 1.24 (m, 2H), 1.40 (m, 2H), 2.65 (m, 2H), 2.70 (m, 2H), 6.67 (s, 2H), 7.49 (m, 3H), 7.94 (m, 2H).

(vii) 5-Phenyl-6-[3-(trifluoromethyl)piperidin-1-yl]-1,2,4-triazin-3-amine

[0304] 5-Phenyl-6-[3-(trifluoromethyl)piperidin-1-yl]-1,2,4-triazin-3-amine (50 mg, 8%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.50 g, 1.99 mmol) and 3-(trifluoromethyl)piperidine (0.40 g, 2.58 mmol) according to the general procedure of Example 2.

HPLC purity: 97.6% (263 nm)

Mass spectroscopy: (ESI +ve) 324.1 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 1.35 (m, 1H), 1.48 (m, 1H), 1.57 (m, 1H), 1.90 (m, 1H), 2.48 (m, 2H), 2.73 (m, 1H), 3.05 (m, 1H), 3.50 (m, 1H), 6.74 (s, 2H), 7.50 (s, 3H), 8.02 (m, 2H).

(viii) 6-(Octahydroquinolin-1(2H)-yl)-5-phenyl-1,2,4-triazin-3-amine

[0305] 6-(Octahydroquinolin-1(2H)-yl)-5-phenyl-1,2,4-triazin-3-amine (39 mg, 7%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (1.00 g, 3.96 mmol) and decahydroquinoline (0.60 g, 4.36 mmol) according to the general procedure of Example 2.

HPLC purity: 98.75% (282 nm)

Mass spectroscopy: (ESI +ve) 310.1 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 0.83 (m, 1H), 1.41 (m, 6H), 1.54 (m, 6H), 2.62 (m, 1H), 2.80 (m, 2H), 6.93 (bs, 2H), 7.47 (m, 3H), 8.15 (m, 2H).

(ix) 6-(3-Methoxypiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine

[0306] 6-(3-Methoxypiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine (33 mg, 4%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.70 g, 2.78 mmol), K_2CO_3 (0.80 g, 5.85 mmol) and 3-methoxy piperidine HCl (0.52 g, 3.34 mmol) according to the general procedure of Example 2.

HPLC purity: 99.32 % (266 nm)

Mass spectroscopy: (ESI +ve) 286.0 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 1.36 (m, 1H), 1.45 (m, 1H), 1.59 (m, 1H), 1.84 (m, 1H), 2.48 (m, 1H), 2.60 (m, 1H), 3.03 (m, 4H), 3.25 (m, 2H), 7.57 (m, 3H), 7.26 (bs, 2H), 7.99 (m, 2H).

(x) 6-(3-Ethynylpiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine

[0307] 6-(3-Ethynylpiperidin-1-yl)-5-phenyl-1,2,4-triazin-3-amine (10 mg, 2%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.60 g, 2.40 mmol) and 3-ethynyl piperidine HCl (0.42 g, 2.87 mmol) according to the general procedure of Example 2.

HPLC purity: 95.99 % (266 nm)

Mass spectroscopy: (ESI +ve) 280.0 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 1.08-1.80 (m, 5H), 2.64 (m, 2H), 2.86 (m, 2H), 3.23 (t, 1H), 6.7 (bs, 2H), 7.48 (m, 3H), 8.06 (d, 2H).

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(xi) 6-(2,6-Dimethylmorpholin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine

[0308] 6-(2,6-Dimethylmorpholin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (110 mg, 20%) was prepared from 6-bromo-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (0.50 g, 1.87 mmol) and 2,6-dimethylmorpholine (1.06 g, 9.36 mmol) according to the general procedure of Example 2.

HPLC purity: 93.61% (264 nm)

Mass spectroscopy: (ESI +ve) 304 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 1.12 (d, 6H), 2.54 (m, 2H), 3.19 (d, 2H), 3.30 (m, 2H), 5.13 (bs, 2H), 7.16 (m, 2H), 8.16 (m, 2H).

[0309] The following compounds were prepared by reacting the indicated starting materials with potassium carbonate (83 mg, 0.60 mmol) in 1,4-dioxane (0.8 mL) and water (0.2 mL) at 140°C for 18 hours, unless a shorter time is specified:

No.	Product (yield)	Prepared From	LCMS	NMR
(xii)	6-(2-ethylmorpholino)-5-phenyl-1,2,4-triazin-3-amine (60 mg, 35%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 2-ethylmorpholine (344 mg, 2.99 mmol)	Mass spectroscopy: m/z 286 (M+H) ⁺ (ES ⁺), at 4.03min, 100% (method B).	(400 MHz, DMSO) δ : 0.73 (t, J 7.5, 3H), 1.22 - 1.44 (m, 2H), 2.38 - 2.47 (m, 1H), 2.65 - 2.77 (m, 1H), 3.02 (d, J 12.2, 1H), 3.12 (d, J 12.2, 1H), 3.33 (s, 1H), 3.48-3.58 (m, 1H), 3.77 (d, J 11.1, 1H), 6.74 (s, 2H), 7.48 - 7.57 (m, 3H), 8.01 - 8.08 (m, 2H).
(xiii)	5-phenyl-6-(6-oxa-9-azaspiro[4.5]decan-9-yl)-1,2,4-triazin-3-amine (48 mg, 25%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 6-oxa-9-azaspiro[4.5]decane hydrochloride (425 mg, 2.390 mmol)	Mass spectroscopy: m/z 312 (M+H) ⁺ (ES ⁺), at 4.24min, 97% purity (method B).	(400 MHz, DMSO) δ : 1.27 - 1.44 (m, 2H), 1.47 - 1.76 (m, 6H), 2.71 - 2.81 (m, 2H), 2.84 (s, 2H), 3.47-3.63 (m, 2H), 6.77 (s, 2H), 7.48 - 7.57 (m, 3H), 7.94 - 8.01 (m, 2H).
(xiv)	6-(2,2-diethylmorpholino)-5-phenyl-1,2,4-triazin-3-amine (47 mg, 25%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 2,2-diethylmorpholine (428 mg, 2.99 mmol)	Mass spectroscopy: m/z 314 (M+H) ⁺ (ES ⁺), at 4.64 min, 100% (method B).	(400 MHz, DMSO) δ : 0.67 (t, J 7.5, 6H), 1.33 (dq, J 14.8, 7.5, 2H), 1.65 (dq, J 14.9, 7.5, 2H), 2.71 - 2.82 (m, 4H), 3.47 - 3.58 (m, 2H), 6.78 (s, 2H), 7.45 - 7.57 (m, 3H), 7.85 - 7.95 (m, 2H).

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(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xv)	6-(2,2-dimethylmorpholino)-5-phenyl-1,2,4-triazin-3-amine (41 mg, 24%); prepared in 6 hours	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 2,2-dimethylmorpholine (344 mg, 2.99 mmol)	Mass spectroscopy: m/z 286 (M+H) ⁺ (ES ⁺), at 4.03min, 98% (method B).	(400 MHz, DMSO) δ: 1.14 (s, 6H), 2.69-2.77 (m, 2H), 2.79 (s, 2H), 3.49 - 3.62 (m, 2H), 6.77 (s, 2H), 7.48 - 7.56 (m, 3H), 7.92 - 8.00 (m, 2H).
(xvi)	(1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-3-methylpiperidin-3-yl)methanol (35 mg, 19%); prepared in 6 hours	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), (3-methylpiperidin-3-yl)methanol (386 mg, 2.99 mmol)	Mass spectroscopy: m/z 300 (M+H) ⁺ (ES ⁺), at 4.10min, 99% (method B).	(400 MHz, DMSO) δ: 0.88 (s, 3H), 1.10-1.20 (m, 1H), 1.31-1.45 (m, 3H), 2.54-2.63 (m, 1H), 2.63-2.72 (m, 1H), 2.75-2.93 (m, 2H), 3.23 (d, J 5.6, 2H), 4.51 (t, J 5.5, 1H), 6.68 (s, 2H), 7.47 - 7.55 (m, 3H), 7.92 - 8.00 (m, 2H).
(xvii)	6-(3-(methoxymethyl)pipe ridin-1-yl)-5-phenyl-1,2,4-triazin-3-amine (75 mg, 42%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), cis-3-(methoxymethyl)pipe ridine (386 mg, 2.99 mmol)	Mass spectroscopy: m/z 300 (M+H) ⁺ (ES ⁺), at 4.4 min, 100% (method B).	(400 MHz, DMSO) δ: 0.95 - 1.12 (m, 1H), 1.37 - 1.60 (m, 2H), 1.61 - 1.73 (m, 1H), 1.80 - 1.94 (m, 1H), 2.37 - 2.47 (m, 1H), 2.50 - 2.58 (m, 1H), 3.03 - 3.21 (m, 6H), 3.28 - 3.34 (m, 1H), 6.68 (s, 2H), 7.47-7.56 (m, 3H), 7.99-8.09 (m, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xviii)	1-(1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)piperidin-3-yl)ethanol (80 mg, 43%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol) and 1-(piperidin-3-yl)ethanol (77 mg, 0.597 mmol)	Mass spectroscopy: m/z m/z 300 (M+H) ⁺ (ES ⁺), at 3.98min, 96% (method B).	(400 MHz, DMSO) δ : 0.91 - 1.03 (m, 1H), 1.22 - 1.32 (m, 2H), 1.38 - 1.59 (m, 2H), 1.59 - 1.69 (m, 1H), 1.69 - 1.80 (m, 1H), 2.28 - 2.38 (m, 1H), 2.47 - 2.56 (m, 1H), 3.07 - 3.16 (m, 1H), 3.18 - 3.30 (m, 3H), 4.25 - 4.38 (m, 1H), 6.68 (s, 2H), 7.46-7.57 (m, 3H), 7.99-8.09 (m, 2H).
(xix)	(1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)piperidin-3-yl)methanol (18 mg, 10%)	piperidin-3-ylmethanol (344 mg, 2.99 mmol) 6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol)	Mass spectroscopy: m/z 286 (M+H) ⁺ (ES ⁺), at 3.78 min, 94% (method B).	(400 MHz, DMSO) δ : 0.94 - 1.08 (m, 1H), 1.34 - 1.57 (m, 2H), 1.61 - 1.74 (m, 2H), 2.38 - 2.61 (m, 2H), 3.04 (s, 1H), 3.13-3.46 (m, 3H), 4.44 (t, J=5.3 Hz, 1H), 6.67 (s, 2H), 7.45 - 7.57 (m, 3H), 7.98 - 8.11 (m, 2H).
(xx)	1-(1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)piperidin-3-yl)ethanone (13 mg, 7%)	1-(piperidin-3-yl)ethanone (380 mg, 2.99 mmol), 6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol)	Mass spectroscopy: m/z 298 (M+H) ⁺ (ES ⁺); at 3.92 min, 95.06% (method B).	(400 MHz, DMSO) δ : 1.30 - 1.51 (m, 2H), 1.52 - 1.63 (m, 1H), 1.85 - 1.96 (m, 1H), 2.01 (s, 3H), 2.62-2.71 (m, 1H), 2.71-2.83 (m, 1H), 2.95-3.12 (m, 1H), 3.31-3.46 (m, 2H), 6.72 (s, 2H), 7.46 - 7.56 (m, 3H), 7.97 - 8.08 (m, 3H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xxi)	6-(octahydroisoquinolin-2(1 <i>H</i>)-yl)-5-phenyl-1,2,4-triazin-3-amine (54.2 mg, 2.1 %); prepared in 8 hours	6-bromo-5-phenyl-1,2,4-triazin-3-amine (2.00 g, 7.96 mmol) and per hydroisoquinoline (2.21 g, 15.9 mmol)	HPLC purity: 97.40 % (277 nm); mass spectroscopy: (ESI +ve) m/z 310.1 [M+H] ⁺	(400 MHz, DMSO) δ : 0.85 (m, 3H), 1.14 (m, 4H), 1.36 (m, 2H), 1.54 (m, 3H), 2.26 (m, 1H), 2.51 (m, 1H), 3.10 (m, 2H), 6.61 (bs, 2H), 7.48 (m, 3H), 8.04 (dd, 2H).
(xxii)	<i>N</i> -(4-methyl-1,3-thiazol-2-yl)-5-phenyl-1,2,4-triazine-3,6-diamine (10 mg, 1%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (1.00 g, 3.98 mmol) and 2-amino-4-methyl thiazole (1.36 g, 11.95 mmol)	HPLC purity: 99.03% (298 nm); mass spectroscopy: (ESI +ve) m/z 284.9 [M+H] ⁺	(400 MHz, DMSO) δ : 2.10 (s, 3H), 6.18 (s, 1H), 6.53 (bs, 2H), 7.48 (m, 3H), 8.15 (m, 2H), 11.61 (b, 1H).
(xxiii)	5-phenyl-6-[4-(trifluoromethyl)piperidin-1-yl]-1,2,4-triazin-3-amine (20 mg, 2%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (1.0 g, 3.9 mmol) and 4-trifluoromethyl piperidine hydrochloride (0.9 g, 4.8 mmol)	HPLC purity: 99.9% (218 nm); mass spectroscopy: (ESI +ve) m/z 323.9 [M] ⁺	(400 MHz, DMSO) δ : 1.46 (m, 2H), 1.75 (m, 2H), 2.34 (m, 1H), 2.66 (m, 2H), 3.23 (m, 2H), 6.72 (s, 2H), 7.51 (m, 3H), 8.02 (m, 2H).
(xxiv)	5-phenyl-6-(3-phenylpiperidin-1-yl)-1,2,4-triazin-3-amine (62 mg, 31%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 3-phenylpiperidine (482 mg, 2.99 mmol)	Mass spectroscopy: m/z 332 (M+H) ⁺ (ES ⁺), at 4.92min, 100% (method B).	(400 MHz, DMSO) δ : 1.51 - 1.77 (m, 3H), 1.83 - 1.92 (m, 1H), 2.58 - 2.72 (m, 2H), 2.74 - 2.84 (m, 1H), 3.24 (d, <i>J</i> 11.7, 1H), 3.34 (d, <i>J</i> 11.7, 1H), 6.67 (s, 2H), 7.04-7.12 (m, 2H), 7.13-7.20 (m, 1H), 7.20-7.28 (m, 2H), 7.52-7.58 (m, 3H), 8.03-8.13 (m, 2H).

(continued)

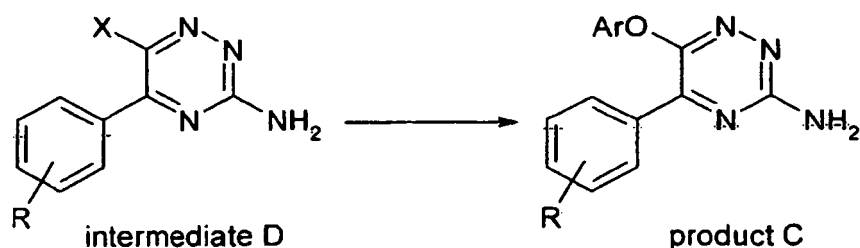
No.	Product (yield)	Prepared From	LCMS	NMR
(xxv)	(4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)morpholin-2-yl)methanol (40 mg, 23%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), morpholin-2-ylmethanol (350 mg, 2.99 mmol)	Mass spectroscopy: m/z 288 (M+H) ⁺ (ES ⁺), at 2.95min, 100% (method B).	(400 MHz, DMSO) δ : 2.51 - 2.58 (m, 1H), 2.63 - 2.74 (m, 1H), 2.91 - 3.02 (m, 1H), 3.33 (s, 3H), 3.47-3.58 (m, 2H), 3.70-3.79 (m, 1H), 4.67 (t, J 5.8, 1H), 6.76 (s, 2H), 7.47 - 7.56 (m, 3H), 8.03 - 8.11 (m, 2H).
(xxvi)	5-phenyl-6-(3-(propoxymethyl)pyrrolidin-1-yl)-1,2,4-triazin-3-amine (39 mg, 20%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 3-(propoxymethyl)pyrrolidine (428 mg, 2.99 mmol)	Mass spectroscopy: m/z 314 (M+H) ⁺ (ES ⁺), at 4.64 min, 95% (method B).	(400 MHz, DMSO) δ : 0.80 (t, J 7.4, 3H), 1.37 - 1.58 (m, 3H), 1.81 - 1.94 (m, 1H), 2.29 - 2.40 (m, 2H), 2.85 (dd, J 10.3, 6.4, 1H), 3.00 - 3.13 (m, 3H), 3.18 - 3.30 (m, 3H), 6.38 (s, 2H), 7.45 - 7.53 (m, 3H), 7.69 - 7.79 (m, 2H).
(xxvii)	2-(1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)piperidin-3-yl)propan-2-ol (56 mg, 31%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 2-(piperidin-3-yl)propan-2-ol (257 mg, 1.792 mmol)	Mass spectroscopy: m/z 314 (M+H) ⁺ (ES ⁺), 4.22 min, 100% (method B).	(400 MHz, DMSO) δ : 0.86 (s, 6H), 1.00-1.13 (m, 1H), 1.38-1.52 (m, 2H), 1.58-1.69 (m, 1H), 1.78-1.88 (m, 1H), 2.30 (app t, J 11.6, 1H), 2.42 - 2.50 (m, 1H), 3.20 - 3.28 (m, 1H), 3.31 - 3.38 (m, 1H), 4.07 (s, 1H), 6.65 (s, 2H), 7.45 - 7.56 (m, 3H), 7.97 - 8.09 (m, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xxviii)	6-(hexahydropyrrolo[1, 2-a]pyrazin-2(1 H)-yl)-5-phenyl-1,2,4-triazin-3-amine (16 mg, 9%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), octahydropyrrolo[1,2-a]pyrazine (377 mg, 2.99 mmol)	Mass spectroscopy: m/z 297 (M+H) ⁺ (ES ⁺), at 4.17min, 100% (method B).	(400 MHz, DMSO) δ: 1.21 - 1.35 (m, 2H), 1.55 - 1.73 (m, 2H), 1.96 - 2.20 (m, 3H), 2.69 - 2.81 (m, 1H), 2.81 - 3.03 (m, 2H), 3.06 - 3.19 (m, 1H), 3.29 - 3.36 (m, 2H), 6.71 (s, 2H), 7.46-7.56 (m, 3H), 8.00-8.09 (m, 2H).
(xxix)	1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-3-ethylpiperidin-3-ol (42 mg, 23%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 3-ethylpiperidin-3-ol (386 mg, 2.99 mmol)	Mass spectroscopy: m/z 300 (M+H) ⁺ (ES ⁺), at 4.14min, 97% (method B).	(400 MHz, DMSO) δ: 0.79 (t, J 7.4, 3H), 1.23 (s, 1H), 1.32-1.52 (m, 4H), 1.54-1.68 (m, 1H), 2.59-2.69 (m, 1H), 2.69-2.80 (m, 1H), 2.86-2.98 (m, 2H), 4.21 (s, 1H), 6.73 (s, 2H), 7.46 - 7.55 (m, 3H), 8.01 - 8.10 (m, 2H).
(xxx)	2-(4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)morpholin-2-yl)ethanol (42 mg, 22%); prepared in 3 hours	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 2-(morpholin-2-yl)ethanol (392 mg, 2.99 mmol)	Mass spectroscopy: m/z 302 (M+H) ⁺ (ES ⁺), at 3.22min, 96% (method B).	(400 MHz, DMSO) δ: 1.34 - 1.61 (m, 2H), 2.48 - 2.58 (m, 1H), 2.62 - 2.74 (m, 1H), 2.91 - 3.02 (m, 1H), 3.09 - 3.20 (m, 1H), 3.27 - 3.42 (m, 2H), 3.46 - 3.56 (m, 1H), 3.56 - 3.67 (m, 1H), 3.68 - 3.78 (m, 1H), 4.39 (t, J 5.1, 1H), 6.74 (s, 2H), 7.47-7.58 (m, 3H), 7.99-8.12 (m, 2H).

Reference Examples 3

[0310]



General procedure for the Preparation of 3-amino-5-aryl-6-aryloxy-1,2,4-triazines

[0311] A solution of intermediate D, a 6-halo-5-aryl-1,2,4-triazin-3-amine, (1.99 mmol) in DMSO (5 mL) is treated sequentially with a phenol derivative (7.90 mmol), NaOH (0.31 g, 7.9 mmol) and cesium carbonate (0.64 g, 1.99 mmol). The resulting mixture is stirred at 90 °C overnight with TLC monitoring (hexane/ethyl acetate, 7:3). Upon completion of the reaction, the mixture is diluted with water (15 mL) and extracted with ethyl acetate (3 x 15 mL). The combined organic extracts are dried over sodium sulfate and concentrated *in vacuo*. The crude product, product C, is purified by gradient flash chromatography, eluting with mixtures of ethyl acetate in hexane (e.g. 15%) or by preparative HPLC.

(i) 6-Phenoxy-5-phenyl-1,2,4-triazin-3-amine

[0312] 6-Phenoxy-5-phenyl-1,2,4-triazin-3-amine (78 mg, 14%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.5 g, 1.99 mmol) and phenol (0.74 g, 7.90 mmol) according to the general procedure of Example 3.

HPLC purity: 99.67% (210 nm)

Mass spectroscopy: (ESI +ve) 265.0 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 7.08 (s, 2H), 7.13 (m, 3H), 7.36 (m, 2H), 7.52 (m, 3H), 8.07 (m, 2H).

(ii) 6-(3-Aminophenoxy)-5-phenyl-1,2,4-triazin-3-amine

[0313] 6-(3-Aminophenoxy)-5-phenyl-1,2,4-triazin-3-amine (25 mg, 8%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 3-amino phenol (0.19 g, 1.78 mmol) according to the general procedure of Example 3.

HPLC purity: 89.7% (238 nm)

Mass spectroscopy: (ESI +ve) 338.0 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ: 5.19 (s, 2H), 6.15 (m, 2H), 6.27 (m, 1H), 6.93 (m, 1H), 7.10 (s, 2H), 7.48-7.56 (m, 3H), 8.04 (d, 2H).

(iii) 6-(3-Fluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine

[0314] 6-(3-Fluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine (78 mg, 23%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 3-fluoro phenol (0.27 g, 2.39 mmol) according to the general procedure of Example 3.

HPLC purity: 99.67 % (244 nm)

Mass spectroscopy: (ESI +ve) 283.1 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 5.29 (s, 2H), 6.87-6.95 (m, 3H), 7.33 (m, 1H), 7.48-7.58 (m, 3H), 8.23 (m, 2H).

(iv) 5-Phenyl-6-[2-(propan-2-yl)phenoxy]-1,2,4-triazin-3-amine

[0315] 5-Phenyl-6-[2-(propan-2-yl)phenoxy]-1,2,4-triazin-3-amine (20 mg, 7%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.40 g, 1.59 mmol) and 2-isopropyl phenol (0.43 g, 3.18 mmol) according to the general procedure of Example 3.

HPLC purity: 96.5% (245 nm)

Mass spectroscopy: (ESI +ve) 307.1 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 1.25 (d, 6H), 3.16 (m, 1H), 5.19 (s, 2H), 7.00 (m, 1H), 7.20 (m, 2H), 7.36 (m, 1H), 7.38-7.59 (m, 3H), 8.31 (m, 2H).

(v) 5-Phenyl-6-[3-(trifluoromethyl)phenoxy]-1,2,4-triazin-3-amine

[0316] 5-Phenyl-6-[3-(trifluoromethyl)phenoxy]-1,2,4-triazin-3-amine (21 mg, 4%) was prepared from 6-bromo-5-phe-

nyl-1,2,4-triazin-3-amine (0.40 g, 1.59 mmol) and 3-(trifluoromethyl)phenol (0.52 g, 3.18 mmol) according to the general procedure of Example 3.

HPLC purity: 88.72 % (245 nm)

Mass spectroscopy: (ESI +ve) 332.9 [M+H]⁺

¹H NMR: (400 MHz, *d*₆-DMSO) δ: 7.10 (s, 2H), 7.49-7.63 (m, 5H), 7.61-7.63 (m, 2H), 8.07-8.09 (d, 2H).

(vi) 6-(4-Fluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine

[0317] 6-(4-Fluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine (35 mg, 8%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.40 g, 1.59 mmol) and 4-fluorophenol (0.36 g, 3.18 mmol) according to the general procedure of Example 3.

HPLC purity: 96.39 % (244 nm)

Mass spectroscopy: (ESI +ve) 283.1 [M+H]⁺

¹H NMR: (400 MHz, *d*₆-DMSO) δ: 7.03 (s, 2H), 7.20-7.22 (m, 4H), 7.50-7.56 (m, 3H), 8.08 (dd, 2H).

(vii) 6-(2-Fluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine

[0318] 6-(2-Fluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine (44 mg, 10%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.40 g, 1.59 mmol) and 2-fluorophenol (0.36 g, 3.18 mmol) according to the general procedure of Example 3.

HPLC purity: 90.06 % (244 nm)

Mass spectroscopy: (ESI +ve) 283.1 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ: 7.04 (s, 2H), 7.25 (m, 2H), 7.37 (m, 2H), 7.53-8.11 (m, 3H), 8.12 (m, 2H).

(viii) 6-(4-Methoxyphenoxy)-5-phenyl-1,2,4-triazin-3-amine

[0319] 6-(4-Methoxyphenoxy)-5-phenyl-1,2,4-triazin-3-amine (45 mg, 13%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.30 g, 1.19 mmol) and 4-methoxyphenol (0.30 g, 2.39 mmol) according to the general procedure of Example 3.

HPLC purity: 92.08 % (218 nm)

Mass spectroscopy: (ESI +ve) 295.1 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 3.81 (s, 3H), 5.29 (s, 2H), 6.92 (d, 2H), 7.08 (d, 2H), 7.50-7.59 (m, 3H), 8.29 (m, 2H).

(ix) 6-[4-Fluoro-3-(trifluoromethyl)phenoxy]-5-phenyl-1,2,4-triazin-3-amine

[0320] 6-[4-Fluoro-3-(trifluoromethyl)phenoxy]-5-phenyl-1,2,4-triazin-3-amine (198 mg, 36%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.40 g, 1.59 mmol) and 4-fluoro-3-(trifluoromethyl)phenol (0.57 g, 3.18 mmol) according to the general procedure of Example 3.

HPLC purity: 95% (235 nm)

Mass spectroscopy: (ESI +ve) 350.9 [M+H]⁺, (ESI -ve) 349.1 [M-H].

¹H NMR: (400 MHz, DMSO) δ: 7.05 (s, 2H), 7.50-7.62 (m, 5H), 7.75 (m, 1H), 8.10 (m, 2H).

(x) 5-Phenyl-6-[3-(trifluoromethoxy)phenoxy]-1,2,4-triazin-3-amine

[0321] 5-Phenyl-6-[3-(trifluoromethoxy)phenoxy]-1,2,4-triazin-3-amine (22 mg, 3%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.50 g, 1.99 mmol) and 3-(trifluoromethoxy)phenol (0.42 g, 2.39 mmol) according to the general procedure of Example 3.

HPLC purity: 95.6% (235 nm)

Mass spectroscopy: (ESI +ve) 348.9 [M+H]⁺.

¹H NMR: (400 MHz, CDCl₃) δ: 5.17 (s, 2H), 7.08 (m, 3H), 7.39 (t, 1H), 7.54 (m, 3H), 8.21 (d, 2H).

(xi) 6-(3-Chlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine

[0322] 6-(3-Chlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine (147 mg, 31%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.40 g, 1.58 mmol) 3-chlorophenol (0.40 g, 3.16 mmol) and K₂CO₃ (432 mg, 3.15 mmol), according to the general procedure of Example 3.

HPLC purity: 98% (245 nm)

Mass spectroscopy: (ESI +ve) 298.9 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 7.12 (s, 2H), 7.14 (m, 1H), 7.21 (m, 1H), 7.35 (m, 1H), 7.40 (m, 1H), 7.55 (m, 3H), 8.06 (m, 2H).

(xii) 6-(3,5-Dichlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine

[0323] 6-(3,5-Dichlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine (89 mg, 17%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.40 g, 1.59 mmol) and 3,5-dichlorophenol (0.52 g, 3.18 mmol) according to the general procedure of Example 3.

HPLC purity: 99.03% (246 nm)

Mass spectroscopy: (ESI +ve) 332.9 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 7.15 (s, 2H), 7.40 (m, 3H), 7.54 (m, 3H), 8.02 (d, 2H).

(xiii) 6-(3,5-Difluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine

[0324] 6-(3,5-Difluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine (101 mg, 17%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.50 g, 1.99 mmol) and 3,5-difluorophenol (0.31 g, 3.98 mmol) according to the general procedure of Example 3.

HPLC purity: 90.33 % (244 nm)

Mass spectroscopy: (ESI +ve) 300.9 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ : 5.46 (bs, 2H), 6.65 (m, 1H), 6.71 (m, 2H), 7.50 (m, 2H), 7.58 (m, 1H), 8.12 (m, 2H).

[0325] The following compounds were prepared by reacting the indicated starting materials according to the general procedure of Example 3.

No.	Product (yield)	Prepared From	LCMS	NMR
(xiv)	6-(3,5-dimethylphenoxy)-5-phenyl-1,2,4-triazin-3-amine (26 mg, 5%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.40 g, 1.59 mmol) and 3,5-(dimethyl) phenol (0.39 g, 2.07 mmol)	HPLC purity: 96.6% (246 nm); mass spectroscopy: (ESI +ve) m/z 293.0 [M+H] ⁺	(400 MHz, DMSO) δ : 2.22 (s, 6H), 6.71 (s, 2H), 6.76 (s, 1H) 7.06 (s, 2H), 7.52 (m, 3H), 8.05 (d, 2H).
(xv)	6-(3-chloro-5-methoxyphenoxy)-5-phenyl-1,2,4-triazin-3-amine (120 mg, 23%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.40 g, 1.59 mmol) and 3-chloro-5-methoxyphenol (0.50 g, 31.8 mmol)	HPLC purity: 98% (245 nm); mass spectroscopy: (ESI +ve) m/z 328.9 [M+H] ⁺	(400 MHz, DMSO) δ : 3.74 (s, 3H), 6.75 (m, 1H), 6.82 (m, 1H), 6.85 (m, 1H), 7.12 (s, 2H), 7.53 (m, 3H), 8.03 (m, 2H).

[0326] The following compounds were prepared by heating the neat mixture of a phenol derivative and bromotriazine derivative (as indicated) with DBU (270 μ l, 1.792 mmol), at 110°C overnight:

No.	Product (yield)	Prepared From	LCMS	NMR
(xvi)	1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)pyridin-4(1H)-one (29 mg, 0.109 mmol, 27.5%)	6-chloro-5-phenyl-1,2,4-triazin-3-amine (0.082 g, 0.398 mmol), DBU (0.298 μ l, 1.990 mmol) and pyridin-4-ol (189 mg, 1.990 mmol)	Mass spectroscopy: m/z 266.2 (M+H) ⁺ (ES ⁺); 264.4 (M-H) ⁻ (ES ⁻), at 2.45 min, 100% (method B).	(400 MHz, DMSO) δ : 6.08 - 6.16 (m, 2H), 7.42 - 7.55 (m, 5H), 7.68 - 7.77 (m, 4H).
(xvii)	6-(4-methylphenoxy)-5-phenyl-1,2,4-triazin-3-amine (51 mg, 51%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), p-cresol (194 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 279.82 (M+H) ⁺ (ES ⁺), at 4.75 min, 99 % (method B).	(400 MHz, DMSO) δ : 2.28 (s, 3H), 7.00-7.04 (m, 2H), 7.05 (s, 2H), 7.12 - 7.22 (m, 2H), 7.49 - 7.60 (m, 3H), 8.04 - 8.13 (m, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xviii)	6-(4-chlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine (38 mg, 35%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 4-chlorophenol (230 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 299.6 (M+H) ⁺ (ES ⁺), at 4.77 min, 99% (method B).	(400 MHz, DMSO) δ : 7.12 (s, 2H), 7.18-7.25 (m, 2H), 7.40-7.46 (m, 2H), 7.49-7.60 (m, 3H), 8.03-8.11 (m, 2H).
(xix)	6-(3,4-difluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine	6-bromo-5-phenyl-1,2,4-triazin-3-amine . (90 mg, 0.358 mmol), 3,4-difluorophenol (233 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 301.64 (M+H) ⁺ (ES ⁺); 299.94 (M-H) ⁻ (ES ⁻), at 4.59 min, 97% (method B).	(400 MHz, DMSO) δ : 7.03 - 7.11 (m, 1 H), 7.11 (s, 2H), 7.41-7.51 (m, 3H), 7.51-7.61 (m, 3H), 8.03-8.11 (m, 2H).
(xx)	6-[(6-methoxypyridin-3-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 6-methoxypyridin-3-ol (224 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 296.0 (M+H) ⁺ (ES ⁺); 4.59 min, 95% (method B).	(400 MHz, DMSO) δ : 3.85 (s, 3H), 6.88 (dd, J 8.9, 0.5, 1H), 7.00 (s, 2H), 7.52-7.63 (m, 3H), 7.68 (dd, J 8.9, 3.0, 1 H), 8.11 (dd, J 2.9, 0.5, 1H), 8.12 - 8.16 (m, 2H).
(xxi)	6-[(2-methylpyridin-3-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 2-methylpyridin-3-ol , (196 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 280.73 (M+H) ⁺ (ES ⁺); 278.94 (M-H) ⁻ (ES ⁻), at 3.90 min, 99% (method B).	(400 MHz, DMSO) δ : 2.38 (s, 3H), 7.05 (s, 2H), 7.28 (ddd, J 8.2, 4.7, 0.5, 1H), 7.52-7.63 (m, 4H), 8.11-8.18 (m, 2H), 8.31 (dd, J 4.7, 1.4, 1 H).
(xxii)	6-[(6-chloropyridin-3-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 6-chloropyridin-3-ol (232 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 300.70 (M+H) ⁺ (ES ⁺), at 3.90 min, 97% (method B).	(400 MHz, DMSO) δ : 7.14 (s, 2H), 7.51-7.63 (m, 4H), 7.83 (dd, J 8.7, 3.0, 1 H), 8.06-8.13 (m, 2H), 8.42 (dd, J 3.0, 0.5, 1H).
(xxiii)	4-[(3-amino-5-phenyl-1,2,4-triazin-6-yl)xy]benzonitrile	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 4-hydroxybenzonitrile (213 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 290.72 (M+H) ⁺ (ES ⁺); 288.96 (M-H) ⁻ (ES ⁻), at 4.09 min, 99% (method B).	(400 MHz, DMSO) δ : 7.28 (s, 2H), 7.34-7.39 (m, 2H), 7.48-7.59 (m, 3H), 7.82-7.90 (m, 2H), 8.00-8.05 (m, 2H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xxiv)	6-[[1-methyl-3-(trifluoromethyl)-1H-pyrazol-5-yl]oxy]-5-phenyl-1,2,4-triazin-3-amine	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 1-methyl-3-(trifluoromethyl)-1H-pyrazol-5-ol (298 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 337.60 (M+H) ⁺ (ES ⁺); 335.81 (M-H) ⁻ (ES ⁻), at 4.35 min, 97% (method B).	(400 MHz, DMSO) δ : 3.79 (s, 3H), 6.58 (s, 1H), 7.27 (s, 2H), 7.52 - 7.66 (m, 3H) 8.04 - 8.12 (m, 2H).
(xxv)	6-[(1-methyl-1H-benzimidazol-5-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 1-methyl-1H-benzimidazol-5-ol (266 mg, 1.792 mmol) and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 319.69 (M+H) ⁺ (ES ⁺), at 4.05 min, 99% (method B).	(400 MHz, DMSO) δ : 3.85 (s, 3H), 7.01 (s, 2H), 7.14 (dd, J 8.7, 2.2, 1H), 7.42 (d, J 2.1, 1H), 7.51 - 7.63 (m, 4H), 8.12 - 8.19 (m, 2H), 8.26 (s, 1H).
(xxvi)	1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)pyridazin-4(1H)-one	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), pyridazin-4-ol (172 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 267.80 ⁺ (ES ⁺); 266.01 (M-H) ⁻ (ES ⁻), at 2.80 min, 96% (method B).	(400 MHz, DMSO) δ : 6.54 (dd, J 8.0, 3.1, 1H), 7.41 - 7.56 (m, 5H), 7.74 (dd, J 3.1, 0.6, 1H), 7.90 (s, 2H), 8.60 (dd, J 8.0, 0.6, 1H).
(xxvii)	1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-3,5-dichloropyridin-4(1H)-one (10 mg, 5%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (150 mg, 0.597 mmol), 3,5-dichloropyridin-4-ol (490 mg, 2.99 mmol),	Mass spectroscopy: m/z 334.55 (M+H) ⁺ (ES ⁺), at 3.05 min, 96% (method B).	(400 MHz, DMSO) δ : 7.44 - 7.60 (m, 5H), 7.94 (s, 2H), 8.42 (s, 2H).
(xxviii)	6-(2,4-dichlorophenoxy)-5-phenyl-1,2,4-triazin-3-amine (16 mg, 13%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 2,4-dichlorophenol (292 mg, 1.792 mmol), and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 333.5 (M+H) ⁺ (ES ⁺), at 5.03 min, 98% purity (method B).	(400 MHz, DMSO) δ : 7.10 (s, 2H), 7.42-7.51 (m, 2H), 7.54-7.64 (m, 3H), 7.80 (d, J 2.4, 1H), 8.11-8.18 (m, 2H).
(xxix)	6-(2,4-difluorophenoxy)-5-phenyl-1,2,4-triazin-3-amine (12 mg, 11%)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 2,4-difluorophenol (233 mg, 1.792 mmol) and DBU (270 μ l, 1.792 mmol)	Mass spectroscopy: m/z 301.67 (M+H) ⁺ (ES ⁺), 99% (method B).	(400 MHz, DMSO) δ : 7.06 (s, 2H), 7.12-7.21 (m, 1H), 7.44-7.65 (m, 5H), 8.09-8.18 (m, 2H).
(xxx)	5-phenyl-6-(pyridin-3-yloxy)-1,2,4-triazin-3-amine	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), pyridin-3-ol (170 mg, 1.792 mmol)	Mass spectroscopy: m/z 266.76 (M+H) ⁺ (ES ⁺); 264.96 (M-H) ⁻ (ES ⁻), at 3.70 min, 99% (method B).	(400 MHz, DMSO) δ : 7.11 (s, 2H), 7.45 (ddd, J 8.4, 4.7, 0.6, 1H), 7.50 - 7.63 (m, 3H), 7.69 (ddd, J 8.4, 2.8, 1.4, 1H), 8.05-8.15 (m, 2H), 8.41 (dd, J 4.7, 1.3, 1H), 8.53 (d, J 2.5, 1H).

(continued)

No.	Product (yield)	Prepared From	LCMS	NMR
(xxxii)	6-[(4-methylpyridin-3-yl)oxy]-5-phenyl-1,2,4-triazin-3-amine	6-bromo-5-phenyl-1,2,4-triazin-3-amine (90 mg, 0.358 mmol), 4-methylpyridin-3-ol (196 mg, 1.792 mmol)	Mass spectroscopy: m/z 280.79 (M+H) ⁺ (ES ⁺), at 3.97 min, 99% (method B).	(400 MHz, DMSO) δ: 2.19 (s, 3H), 7.02 (s, 2H), 7.39 (d, J 4.9, 1H), 7.54 - 7.64 (m, 3H), 8.13 - 8.21 (m, 2H), 8.32 (d, J 4.8, 1H), 8.39 (s, 1H).
(xxxii)	5-phenyl-6-(p-tolylthio)-1,2,4-triazin-3-amine (407 mg, 1.383 mmol, 69.4 %)	6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.50g, 1.991 mmol) and 4-methylbenzenethiol (1.24 g, 9.96 mmol)	Mass spectroscopy: m/z 295.2 (M+H) ⁺ (ES ⁺), at 4.77 min, 100% (method B).	(400 MHz, DMSO) δ: 2.26 (s, 3H), 7.09-7.15 (m, 4H), 7.44 (s, 2H), 7.46 - 7.55 (m, 3H), 7.67 - 7.72 (m, 2H).

Reference Example 4

Preparation of (i) 3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenol; and (ii) 3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenyltrifluoromethanesulfonate**Step 1: 3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenol**

[0327] 3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenol (890 mg, 85%) was prepared by demethylation of 6-(3-chloro-5-methoxyphenyl)-5-phenyl-1,2,4-triazin-3-amine (1.2 g, 3.84 mmol; *vide supra*) with BBr₃ (5 mL) at -70°C for 2 hours and then for a further 16 hours at RT. The resulting mixture was then poured into water (25 mL) and extracted with DCM (3 x 30 mL). The combined organic extracts were then dried over Na₂SO₄ and concentrated under vacuum. The crude compound was purified by gradient flash chromatography, eluting with 30% ethyl acetate in hexane to afford the target compound.

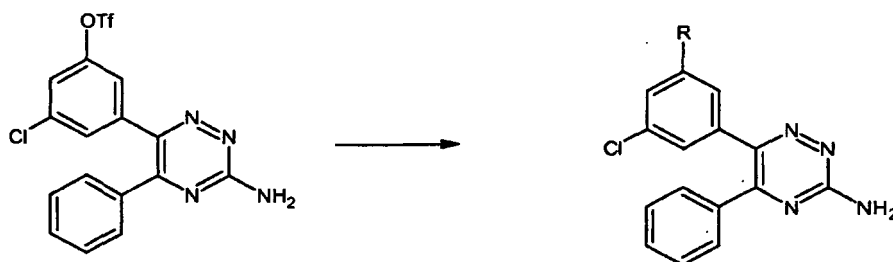
HPLC purity: 96.94% (262 nm)

Mass spectroscopy: (ESI +ve) 298.9 [M+H]⁺.

¹H NMR: (400 MHz, DMSO) δ: 6.68 (m, 1H), 6.75 (m, 2H), 7.35-7.45 (m, 7H), 9.98 (s, 1H).

[0328] Step 2: 3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenyl trifluoromethanesulfonate 3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenyl trifluoromethanesulfonate (2.5 g, 90%) was prepared from 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenol (1.5 g, 5.03 mmol). The alcohol was dissolved in DCM (15 mL), cooled to 0°C and treated with triethylamine (0.66 g) for 10 minutes. Trifluoromethane sulphonyl chloride was then added at 0 °C and the mixture was warmed to RT and maintained at this temperature for 1.5 hours. The mixture then was poured into water (25 mL) and extracted with DCM (3 x 30 mL); the combined organic extracts were then dried over Na₂SO₄ and concentrated in vacuo. The crude compound was used as such in the next step.

Mass spectroscopy: (ESI +ve) 431.0 [M+H]⁺, (ESI -ve) 429.0 [M-H]⁺.

General procedure for Pd-mediated cross-couplings of 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenyltrifluoromethanesulfonate**[0329]**

[0330] 3-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenyl trifluoromethanesulfonate (0.65 g, 1.51 mmol) was dissolved in DMF (10 mL) and the resulting solution was treated sequentially with LiCl (0.21 g) and a suitable organostannane or -boronic acid coupling partner (1.81 mmol). The resulting mixture was stirred at room temperature for 5-10 minutes then treated with palladium(0) tetrakis triphenylphosphine (0.087 g, 0.075 mmol) at reflux (90 °C) for 4-5 hours. After this time, the mixture was poured into water (25 mL) and extracted with an organic solvent such as DCM or ethyl acetate (3 x 30 mL). The combined organic extracts were then dried over Na₂SO₄, concentrated in vacuo and the isolated target compound was purified by gradient flash chromatography, eluting with ethyl acetate/hexane mixtures.

(i) 6-(3-Chloro-5-ethenylphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0331] 6-(3-Chloro-5-ethenylphenyl)-5-phenyl-1,2,4-triazin-3-amine (54 mg, 11%) was prepared from 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenyl trifluoromethanesulfonate (0.65 g, 1.51 mmol) and tri-*n*-butyl(vinyl) tin (0.57 g, 1.81 mmol) according to the general procedure for Example 4.

HPLC purity: 98.35% (248 nm)

Mass spectroscopy: (ESI +ve) 309.0 [M+H]⁺.

¹H NMR: (400 MHz, DMSO) δ: 5.27 (d, 1H), 5.72 (d, 1H), 6.62 (dd, 1H), 7.23 (m, 1H), 7.44 (m, 6H), 7.51 (m, 1H), 7.57 (bs, 2H).

(ii) 6-(3-Chloro-5-cyclopropylphenyl)-5-phenyl-1,2,4-triazin-3-amine

[0332] 6-(3-Chloro-5-cyclopropylphenyl)-5-phenyl-1,2,4-triazin-3-amine (20 mg, 7%) was prepared from 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-chlorophenyl trifluoromethane-sulfonate (0.40 g, 0.93 mmol) and tri-*n*-butyl(cyclopropyl) tin (0.37 g, 1.11 mmol) according to the general procedure for Example 4.

HPLC purity: 95.98% (227 nm)

Mass spectroscopy: (ESI +ve) 322.9 [M+H]⁺.

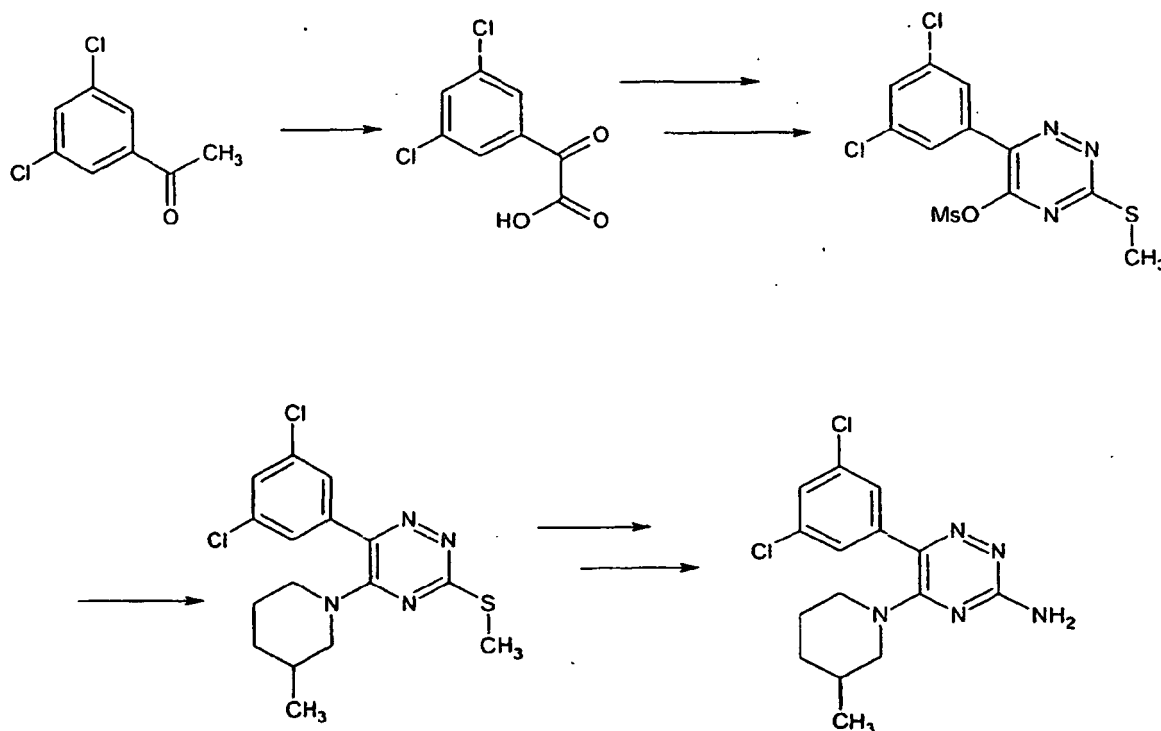
¹H NMR: (400 MHz, CDCl₃) δ: 0.47 (m, 2H), 0.87 (m, 2H), 1.36 (m, 1H), 5.58 (bs, 2H), 6.84 (s, 1H), 7.06 (s, 1H), 7.26 (s, 1H), 7.37 (m, 2H), 7.45 (m, 3H).

Example 5: other synthetic methods

Compounds of Example 5 marked with an asterisk are Reference Compounds

* (i) 6-(3,5-Dichlorophenyl)-5-(3-methylpiperidin-1-yl)-1,2,4-triazin-3-amine

[0333]



[0334] Step 1: Selenium dioxide (30.0 g 270 mmol) was dissolved in dioxane (450 mL) and warmed to 50°C. 3,5-Dichloroacetophenone (30.0g, 158 mmol) was added at at this temperature and the resulting mixture was refluxed for 4 h. After completion of the reaction, the mixture was filtered through celite and concentrated *in vacuo*. (3,5-Dichlorophenyl)(oxo)acetic acid was isolated and purified by column chromatography, eluting with ethyl acetate/hexane mixtures (28 g, 80%).

Mass spectroscopy: (ESI-ve) 217 [M-H]⁻

[0335] Step 2: (3,5-Dichlorophenyl)(oxo)acetic acid (28.0 g 129.0 mmol) was dissolved in ethanol (280 mL) and treated successively with a catalytic, quantity of sulfuric acid and methyl hydrazinecarbamidomethyl sulfide (20.5 g, 193.5 mmol). The resulting mixture was stirred for 1 hr at 78°C. After completion of the reaction (TLC), the mixture was concentrated *in vacuo*, poured into water (150 mL), and extracted with DCM (3 x 250 mL). The combined organic extracts were then dried over Na₂SO₄, concentrated *in vacuo*, and purified by gradient flash chromatography, affording 6-(3,5-dichlorophenyl)-3-(methylthio)-1,2,4-triazin-5-ol (19 g, 46%).

Mass spectroscopy: (ESI +ve) 287.9 [M-H]⁺, (ESI -ve) 286.0 [M-H]⁺

¹H NMR: (400 MHz, DMSO) δ: 2.49 (s, 3H), 7.73 (m, 1H), 8.05 (d, 2H), 14.32 (s, 1 H).

[0336] Step 3: 6-(3,5-Dichlorophenyl)-3-(methylthio)-1,2,4-triazin-5-ol (2.0 g, 6.96 mmol) was dissolved in 1,4-dioxane (20 mL) and cooled to 15°C. TEA (1.76 g, 17.4 mmol) was added drop wise to the solution, followed 5 minutes later, by methanesulfonyl chloride (1.99 g, 17.42 mmol). After stirring at room temperature for 3 hours, 6-(3,5-dichlorophenyl)-3-(methylsulfanyl)-1,2,4-triazin-5-yl methanesulfonate was detected by LCMS and the crude mixture was used directly in the next step.

Mass spectroscopy: (ESI +ve) 366.9 [M-H]⁺

[0337] Step 4: A crude solution of 6-(3,5-dichlorophenyl)-3-(methylsulfanyl)-1,2,4-triazin-5-yl methanesulfonate (5.43 mmol) in dioxane (3 mL), was treated with K₂CO₃ (1.0 g, 7.2 mmol) and 3-methyl piperidine (1.68 g, 16.9 mmol), and the resulting mixture was stirred at room temperature overnight. After completion of the reaction (TLC, ethyl acetate/hexane, 1:1), the mixture was poured into water (25 mL) and extracted with DCM or ethyl acetate (3 x 25 mL). The combined organic extracts were then dried over Na₂SO₄, concentrated *in vacuo* and purified by flash chromatography, eluting with 15% ethyl acetate in hexane to afford 6-(3,5-dichlorophenyl)-5-(3-methylpiperidin-1-yl)-3-(methylsulfanyl)-1,2,4-triazine (0.8 g, 40 %).

Mass spectroscopy: (ESI +ve) 369.0 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ: 0.67 (m, 3H), 1.07 (m, 2H), 1.35 (m, 1H), 1.53 (m, 2H), 1.67 (m, 1H), 2.45 (s, 3H), 2.74 (m, 1H), 3.64 (m, 1H), 3.76 (s, 1H), 7.60 (d, 2H), 7.64 (m, 1H).

[0338] Step 5: *m*-CPBA (0.654 g, 3.78 mmol) was added to a solution of a 6-(3,5-dichlorophenyl)-5-(3-methylpiperidin-1-yl)-3-(methylsulfanyl)-1,2,4-triazine (0.4 g, 1.08 mmol) in DCM (5 mL) at -15 °C and the resulting mixture was stirred at this temperature until the reaction was judged to be complete by TLC (8 hrs). The reaction was then quenched with

saturated aqueous NaHCO_3 solution (15 ml) and extracted with ethyl acetate (3 x 15 ml). The combined organic extracts were dried over Na_2SO_4 and evaporated under reduced pressure to afford crude 6-(3,5-dichlorophenyl)-5-(3-methylpiperidin-1-yl)-3-(methylsulfonyl)-1,2,4-triazine (1.0 g, 91%) which was used without further purification.

[0339] Step. 6: A 6-(3,5-Dichlorophenyl)-5-(3-methylpiperidin-1-yl)-3-(methylsulfonyl)-1,2,4-triazine (0.25 g, 0.625 mmol) was dissolved in THF (5 mL) and the solution was purged with anhydrous NH_3 gas for 1 hour. After completion of the reaction (TLC), the mixture was poured into water (15 mL) and extracted with DCM or ethyl acetate (3 x 15 ml). The combined organic extracts were dried over Na_2SO_4 , concentrated in vacuo and then treated with 1 N HCl solution for 10 min and extracted with ethyl acetate. The separated aqueous layer was neutralized with K_2CO_3 and extracted with ethyl acetate (3 x 150 ml); the organic phases were then dried over Na_2SO_4 and purified by gradient flash chromatography, affording 6-(3,5-dichlorophenyl)-5-(3-methylpiperidin-1-yl)-1,2,4-triazin-3-amine (0.01 g, 1 %).

HPLC purity: 88.07% (218 nm)

Mass spectroscopy: (ESI +ve) 338.9 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 0.90 (m, 1H), 1.16 (m, 2H), 1.42 (m, 2H), 1.58 (s, 1H), 1.72 (m, 1H), 2.52 (m, 3H), 2.61 (m, 1H), 2.79 (m, 1H), 7.64 (s, 2H), 7.76 (s, 1H), 7.64 (bs, 2H).

* (ii) 6-(6-(Methylamino)pyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine

[0340] 6-(6-(Methylamino)pyridin-3-yl)-5-phenyl-1,2,4-triazin-3-amine (49.5 mg, 0.177 mmol, 71.4%) was prepared from 5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)pyridin-2-yl(methyl)carbamate (vide supra), by BOC deprotection with trifluoroacetic acid (0.4 mL) in dichloromethane (1.6 mL) for 1 hour at room temperature.

HPLC purity: 99.7% (254 nm) at 3.45 min

Mass spectroscopy: (ESI +ve) 279.8 [M+H]⁺

¹H NMR: (400 MHz, DMSO) δ : 2.74 (d, J 4.8, 3H), 6.36 (dd, J 8.7, 0.7, 1H), 6.62 - 6.75 (m, 1H), 7.27 (s, 2H), 7.30 (dd, J 8.7, 2.4, 1H), 7.36 - 7.47 (m, 5H), 7.90 (dd, J 2.4, 0.6, 1H).

* (iii) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2,6-diiodophenol

[0341] 4-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-phenol (vide supra; 140 mg, 0.530 mmol) was reacted with AcOH (2 mL) and 1-iodopyrrolidine-2,5-dione (119 mg, 0.530 mmol). The mixture was stirred at room temperature for 1 hour then concentrated in vacuo and purified by column chromatography (88 mg, 64%).

HPLC purity: 99% (254 nm) at 3.1 min

Mass spectroscopy: (ESI +ve) 517 [M+H]⁺; (ESI -ve) 515 [M-H]⁻

¹H NMR: (400 MHz, DMSO) δ : 7.35 - 7.50 (m, 7H), 7.64 (s, 2H), 9.69 (s, 1 H).

* (iv) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-iodophenol

[0342] 4-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-phenol (vide supra; 140 mg, 0.530 mmol) was reacted with AcOH (2 mL) and 1-iodopyrrolidine-2,5-dione (119 mg, 0.530 mmol). The mixture was stirred at room temperature for 1 hour then concentrated in vacuo and purified by column chromatography (35 mg, 32%).

HPLC purity: 99% (254 nm) at 2.7 min

Mass spectroscopy: (ESI +ve) 391 [M+H]⁺; (ESI -ve) 389 [M-H]⁻

¹H NMR: (400 MHz, DMSO) δ : 6.77 (d, J 8.4 Hz, 1 H), 7.06 (dd, J 8.4, 2.2 Hz, 1 H), 7.28-7.47 (m, 7H), 7.68 (d, J 2.2 Hz, 1H), 10.51 (s, 1H).

* (v) 6-(3-Methoxy-5-(trifluoromethoxy)phenyl)-5-phenyl-1,2,4-triazin-3-amine

[0343] 6-(3-Methoxy-5-(trifluoromethoxy)phenyl)-5-phenyl-1,2,4-triazin-3-amine was prepared from 3-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-5-(trifluoromethoxy)phenol (100 mg, 0.287 mmol). The phenol was dissolved in THF (2 mL) and treated with iodomethane (17.87 μL , 0.287 mmol) at 0°C. After ~ 15 minutes, the mixture was then allowed to warm to r.t. slowly.

Solvent was removed in vacuo; water (2ml) and DCM (2ml) were added and the layers were separated through a phase separator cartridge. The organic was concentrated to dryness in vacuo and purified by column chromatography (33 mg, 32%).

HPLC purity: 100% (254 nm) at 4.82 min

Mass spectroscopy: (ESI +ve) 363 [M+H]⁺; (ESI -ve) 361 [M-H]⁻

¹H NMR: (400 MHz, DMSO) δ : 3.71 (s, 3H), 6.75 - 6.76 (m, 1H), 6.89 - 6.90 (m, 1H), 7.00 - 7.01 (m, 1 H), 7.32 - 7.48 (m, 5H), 7.53 (s, 2H)

* (vi) *N*-[5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-methoxyphenyl]acetamide

[0344] Step 1: Preparation of *N*-(5-bromo-2-hydroxyphenyl)acetamide 2-Amino-4-bromophenol (1 g, 5.32 mmol) was dissolved in DCM (10 mL) and cooled to 10 °C. Triethylamine (0.65 g, 6.38 mmol) was then added drop-wise and stirring continued for 5 minutes before acetyl chloride (0.54 g, 6.91 mmol) was added. The reaction mixture was monitored to completion by TLC (hexane/ethyl acetate, 7:3) then quenched by saturated sodium bicarbonate solution (30 mL). The aqueous layer was extracted with ethyl acetate (3 x 30 mL) and the combined organic phases were dried over Na₂SO₄ and concentrated *in vacuo*. The crude residue (0.57 g, 47%) was used in the next step without further purification.

TLC R_f: 0.6 (hexane/ethyl acetate, 7:3)

Mass spectroscopy: (ESI +ve) 230.9 [M+H]⁺, (ESI -ve) 229.0 [M+H]⁺.

¹H NMR: (400 MHz, DMSO) δ: 2.07 (s, 3H), 6.78 (d, 1H), 7.04 (d, 1H), 8.04 (d, 1H), 9.26 (s, 1H), 10.15 (s, 1H).

Step 2: Preparation of *N*-(5-bromo-2-methoxyphenyl)acetamide

[0345] *N*-(5-Bromo-2-hydroxyphenyl)acetamide (0.56 g, 2.43 mmol) was dissolved in anhydrous DMF (7.0 mL) and treated with K₂CO₃ (0.85 g, 6.09 mmol). The resulting mixture was heated at 70°C for 30 minutes then treated with methyl iodide (0.69 g, 4.87 mmol). After stirring for a further 16 hours at 60°C, the reaction mixture was quenched with water (25 mL) and the aqueous layer was extracted with ethyl acetate (3 x 30 mL). The combined organic layers were dried over Na₂SO₄ and concentrated *in vacuo*. The resulting residue (0.54 g, 92%) was used in the next step without further purification.

Mass spectroscopy: (ESI +ve) 244.9 [M+H]⁺

TLC R_f: 0.8 (hexane/ethyl acetate, 7:3)

Step 3: Preparation of *N*-[2-methoxy-5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl]acetamide

[0346] *N*-(5-Bromo-2-methoxyphenyl) acetamide (0.52 g, 2.13 mmol) was dissolved in DME (10 mL) and treated with palladium(II) dibenzylidene acetone (65 mg, 0.11 mmol), triphenyl phosphine (40 mg, 0.15 mmol), bis(pinacolato)diboron (0.65 g, 2.56 mmol) and potassium acetate (0.63 g, 6.4 mmol). The resulting mixture was heated at 150°C overnight then quenched with water (30 mL). The aqueous layer was extracted with ethyl acetate (3 x 30 mL) and the combined organic phases were dried over Na₂SO₄ and concentrated *in vacuo*. The crude residue (1.08 g, 91%) was used in the next step without further purification.

Mass spectroscopy: (ESI +ve) 292.1 [M+H]⁺.

TLC R_f: 0.5 (hexane/ethyl acetate, 7:3)

Step 4: Preparation of *N*-[5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-methoxyphenyl]acetamide

[0347] *N*-[5-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-2-methoxyphenyl]acetamide (0.170 g, 25%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.5 g, 1.99 mmol) and *N*-[2-methoxy-5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl]acetamide according to the general procedure of Example 1.

HPLC purity: 97.62% (283 nm)

Mass spectroscopy: (ESI +ve) 336.1 [M+H]⁺.

NMR: (400 MHz, DMSO) δ: 2.04 (s, 3H), 3.79 (s, 3H), 6.82 (d, 1 H), 6.90 (d, 1 H), 7.33 (m, 4H), 7.39 (m, 3H), 8.13 (s, 1H), 9.13 (s, 1H).

* (vii) *N*-[5-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-2-hydroxyphenyl]acetamide

[0348] *N*-[5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-hydroxyphenyl]acetamide was prepared by *O*-demethylation of *N*-[5-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-2-methoxyphenyl]acetamide (0.05 g, 0.15 mmol; *vide supra*). The methyl ether was dissolved in DCM (5 mL), cooled to -78°C and treated with borontribromide (5.25 mmol, 1.32 g). The resulting mixture was gradually warmed to RT then stirred at this temperature for a further 16 hours. The mixture was poured into water (15 mL) and extracted with DCM (3 x 15 mL). The combined organic extracts were dried over Na₂SO₄, concentrated in vacuum and purified by gradient flash chromatography, eluting with 30% ethyl acetate in hexane to afford the target compound (0.30 g, 85%).

HPLC purity: 96.15% (219 nm)

Mass spectroscopy: (ESI +ve) 322.0 [M+H]⁺.

¹H NMR: (400 MHz, DMSO) δ: 2.05 (s, 3H), 6.71 (m, 2H), 7.43 (m, 5H), 8.00 (m, 1H), 8.49 (bs, 2H), 9.26 (s, 1 H), 10.26 (bs, 1H).

(viii) 6-(2-Methyl-6-d₃-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine

Step 1: Preparation of 2,4,6-tri(d₃-methyl)cyclotriboroxane-pyridine complex

[0349] A solution of trimethyl borate (10.0 mL) in THF (100 mL) was cooled under N₂ to -78°C and a solution of methyl-d₃-magnesium iodide (50.0 mL, 1 M in diethyl ether, 50.0 mmol) was added drop-wise over 1 hour. After stirring at -78°C for a further 1.5 hours 1 M aqueous HCl (25 mL) was added drop-wise over approximately 5 min and the mixture was allowed to warm to room temperature. Brine (20 mL) was added and the mixture was filtered through a short pad of celite, rinsing the celite pad with diethyl ether (50 mL). The phases were separated and the aqueous phase was extracted with diethyl ether (3 x 50 mL). The combined organic phases were washed with water (50 mL) and brine (50 mL) and then concentrated *in vacuo* to approximately 25 mL volume. Pyridine (10 mL) was added and the light yellow solution was stirred at ambient temperature for 19.5 hours before concentration *in vacuo* to yield the title compound (1.39 g, crude) as a light-yellow semi-solid which was used without purification.

LCMS: m/z 214.1 [M+H]⁺ (ESI +ve), 0.3 min (method A).

[0350] Step 2: Synthesis of 6-(2-methyl-6-d₃-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine A mixture of 6-(2-chloro-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine (70.4 mg, 0.236 mmol), crude 2,4,6-tri(d₃)methylcyclotriboroxane-pyridine complex (504 mg, approximately 2.36 mmol), 1 M aqueous sodium carbonate solution (0.59 mL, 0.59 mmol) and tetrakis(triphenylphosphine)palladium(0) (27.2 mg, 0.024 mmol) in 1,4-dioxane (3 mL) and water (2 mL) in a sealed vial was heated in a microwave reactor at 150°C for 20 mins. After concentration *in vacuo*, DCM (10 mL) and water (10 mL) were added and the phases were separated. The aqueous phase was extracted with DCM (2 x 5 mL) and the combined organic phases concentrated *in vacuo*. Purification by gradient flash chromatography (SiO₂, 5 to 40% solvent A in B. Solvent A: CH₂Cl₂, solvent B: 7N NH₃ in MeOH / MeOH/ CH₂Cl₂ 5:5:90) yielded the title compound as a yellow solid (30.5 mg, 46%).

LCMS m/z 281.1 (M+H)⁺ (ES⁺) at 2.26 min, 100% (method C).

NMR (400 MHz, CDCl₃) δ: 2.47 (s, 3H), 5.44 (s, 2H), 7.02 (s, 2H), 7.33-7.39 (m, 2H), 7.43-7.49 (m, 3H).

* (ix) 1-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-3,5-dimethylpyridin-4(1H)-one

Step 1: Preparation of 1-(3,5-dimethylpyridin-4-yl)-3,5-dimethylpyridinium chloride

[0351] 3,5-lutidine (1.0 g, 9.3 mmol) was added to SOCl₂ (2.0 mL, 27.9 mmol) at -10°C. The resulting mixture was heated to 120°C and was stirred for a further two to three hours. The reaction was monitored to completion by TLC (ethyl acetate/hexane, 1:1) then precipitated with ethyl acetate. The desired product was collected by filtration and used in the next step without further purification (1.79 g, 90%).

Mass: (ESI +ve) 214.1 [M+H]⁺

TLC R_f: 0.05 (methanol/chloroform, 3:7).

Step 2: Preparation of 3,5-dimethylpyridin-4-ol

[0352] 1-(3,5-dimethylpyridin-4-yl)-3,5-dimethylpyridinium chloride (1.0 g, 4.7 mmol) and anhydrous H₃PO₃ (0.97 g, 11.7 mmol) were heated, as a neat mixture, to 150-160°C in a sealed tube for 8 hours with TLC monitoring (methanol/chloroform 5:5). Upon completion of the reaction, the mixture was diluted with ethanol and acetone (1:1, 50 mL), filtered and concentrated under vacuum. The product was purified employing Dowex 50 resin.

Mass: (ESI +ve) 124.0 [M+H]⁺

TLC R_f: 0.38 (methanol/chloroform, 2:8).

Step 3: Preparation of 1-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-3,5-dimethylpyridin-4(1H)-one

[0353] 1-(3-Amino-5-phenyl-1,2,4-triazin-6-yl)-3,5-dimethylpyridin-4(1H)-one (40 mg, 5%) was prepared from 6-bromo-5-phenyl-1,2,4-triazin-3-amine (0.70 g, 2.7 mmol), 3,5-dimethylpyridin-4-ol (0.45 g, 3.7 mmol) and K₂CO₃ (0.93g, 6.7 mmol) according to the general procedure of Example 3.

HPLC purity: 92.33 % (286 nm)

Mass spectroscopy: (ESI +ve) 294.1 [M+H]⁺

¹H NMR: (400 MHz, CDCl₃) δ: 1.77 (s, 6H), 7.44 (m, 5H), 7.66 (s, 2H), 7.74 (bs, 2H).

(x) 6-[2-(Azetidin-1-yl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine

[0354] 6-[2-(Azetidin-1-yl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine was prepared from 5-phenyl-6-(2-chloro-

ro-6-methyl-pyridin-4-yl)-1,2,4-triazin-3-amine (100mg, 0.34mmol) and azetidine (96mg, 0.11ml, 1.69mmol) according to the general procedure for Preparation 4a.

LCMS: (ES⁺) 319.1 (M+H)⁺ at 4.02 min, 99% (method C).

¹H NMR: (400 MHz, DMSO) δ : 2.22 (s, 3H), 2.22 - 2.28 (m, 2H), 3.76 (t, J 7.3, 4H), 5.99 (s, 1 H), 6.47 (s, 1H), 7.39 - 7.50 (m, 5H), 7.52 (bs, 2H).

(xi) 6-[2-(azetidin-1-yl)-6-methylpyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine

[0355] 6-[2-(azetidin-1-yl)-6-methylpyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine (6.0 mg, 4%) was prepared from 5-(4-fluorophenyl)-6-(2-chloro-6-methyl-pyridin-4-yl)-1,2,4-triazin-3-amine (150mg, 0.48mmol) and azetidine (136mg, 0.16ml, 2.38mmol) according to the general procedure for Preparation 4a.

LCMS: (ES⁺) 337.1 (M+H)⁺ at 4.18 min, 97% (method C).

¹H NMR: (400 MHz, DMSO) δ : 2.23 (s, 3H), 2.24 - 2.30 (m, 2H), 3.79 (t, J 7.6, 4H), 6.52 (s, 1H), 6.86 (s, 1H), 7.24 - 7.29 (m, 2H), 7.48 - 7.50 (m, 2H), 7.55 (bs, 2H).

(xii) 6-[2-(Azetidin-1-yl)-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine

[0356] 6-[2-(Azetidin-1-yl)-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine (20.0mg, 19%) was prepared from 5-phenyl-6-(2-chloro-6-trifluoromethyl-pyridin-4-yl)-1,2,4-triazin-3-amine (100mg, 0.28mmol) and azetidine according to the general procedure for Preparation 4a.

LCMS: (ES⁺) 373.0 (M+H)⁺ at 4.52 min, 99% (method C).

¹H NMR: (400 MHz, DMSO) δ : 2.27 - 2.35 (m, 2H), 3.89 (t, J 7.5, 4H), 6.03 (s, 1 H), 6.46 (s, 1H), 7.41 - 7.53 (m, 5H), 7.69 (br. s, 2H).

Example 6

[0357] The compounds of Examples 1 to 5 were found to possess activity in biological tests described above. Biological activity determined by Test A includes IC₅₀ and pKi values for human A_{2a} and A₁ receptors, and the compounds of Examples 1 to 5 were found to possess pKi values in excess of 5 (or 6) vs. at least one of these receptors (for example as illustrated for certain compounds in the table below).

Example no.	pKi A _{2a}	pKi A ₁
1(vi)	7.29	7.25
1(ix)	7.70	7.81
1(xiii)	8.40	7.36
1(xv)	7.11	8.45
1(xviii)	6.75	6.91
1(xxiv)	6.97	8.03
1 (xxx)	6.30	ND
1(xxxv)	7.19	8.20
1(xli)	8.68	7.83
1(xlii)	8.86	9.84
1(xliii)	7.74	8.54
1(ii)	8.66	6.87
1(lvi)	8.22	7.33
1(lxxii)	6.99	8.52
1(lxxvii)	8.11	7.29
1(lxxix)	7.45	9.35
1(lxxx)	6.61	6.01

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(continued)

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Example no.	pKi A2a	pKi A1
1(xc)	8.07	7.26
1(xcv)	7.86	6.67
1(cxxxiv)	5.62	7.62
1(cxlvi)	6.31	7.40
1(cliv)	7.56	6.77
1(clviii)	7.98	6.96
1(clix)	7.81	7.07
1(clxix)	8.40	6.99
1(clxxiv)	8.07	6.89
1(clxxvi)	8.03	6.93
1(clxxix)	8.62	7.52
1(clxxx)	8.90	7.76
1(clxxxi)	8.71	7.17
1(cxc)	8.26	7.36
1(cxciii)	8.34	6.93
1(cciv)	7.21	5.97
1(ccix)	8.59	7.60
1(ccxi)	7.71	8.74
1(ccxii)	8.66	7.68
1(ccxiii)	7.51	7.12
1(ccxviii)	6.58	5.25
2(iii)	7.31	5.37
2(iv)	7.79	<5
2(vi)	7.39	<5
2(xxii)	5.07	6.71
2(xxv)	5.53	7.49
3(i)	7.17	<5
3(v)	5.96	ND
3(xvi)	7.41	7.15
3(xxi)	6.22	8.07
3(xxiv)	7.39	8.46
3(xxxii)	5.82	7.00
4(ii)	7.89	7.43
5(vii)	6.73	8.69
5(viii)	7.91	7.26
5(ix)	7.77	7.62
5(x)	8.52	8.05
5(xi)	7.76	6.90

Example 7

[0358] The compounds of Example 1 (vi) and Example 1 (xliii) (dose of 2 - 10 mg/kg or 0.3 - 3 mg/kg, p.o., respectively; 120 min pre-test time) were found to reverse cataleptic behaviour in rats pre-treated with haloperidol in a dose-dependent manner with an ED₅₀ of 9.8 and 0.27 mg/kg (p.o.), respectively, using the procedure described in Test B above. In a similar manner, the compounds of Examples 1(xiii), 1(ii), 1(lvi), 1(lxxvii), 1(xc), 1(xcv), 1(cliv), 1(clviii), 1(clix), 1(ccix), 1(cxc), 1(cxciii), 1(clxix), 1(clxxix), 1(clxxxiv), 1(ccxii) and 5(x) were found to reverse cataleptic behavior in rats pre-treated with haloperidol in a statistically significant manner at a dose of 1 mg/kg (p.o.) (with a 120 min pre-test time, according to Test B above.

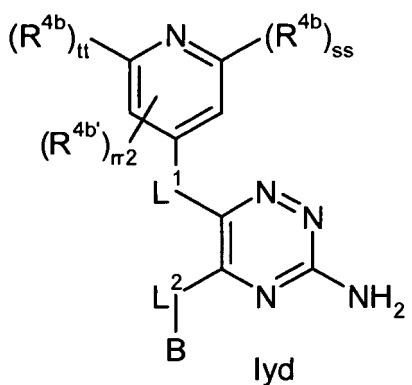
Abbreviations

<i>m</i> -CPBA	= <i>m</i> -chloroperoxybenzoic acid
bmim	= 1-butyl-3-methylimidazolium
DCM	= dichloromethane
DME	= dimethoxyethane
DMF	= dimethylformamide
DMSO	= dimethylsulfoxide
ESI	= electro spray ionisation
EtOAc	= Ethyl acetate
FT	= fourier transform
HPLC	= high performance liquid chromatography
IR	= infra-red
LC	= liquid chromatography
MS	= mass spectrometry
NMP	= N-methyl pyrrolidinone
NMR	= nuclear magnetic resonance
rt	= room temperature
THF	= tetrahydrofuran
TLC	= thin layer chromatography

[0359] Prefixes *n*-, *s*-, *i*-, *t*- and *tert*- have their usual meanings: normal, secondary, *iso*, and tertiary.

Claims

1. A compound of formula lyd,



wherein:

B represents a Cy^{BB} or Het^{BB};

Cy^{BB} represents phenyl optionally substituted by one or more R^{4c} substituents;

Het^{BB} represents a 6-membered aromatic heterocyclic group which contains one or more N atoms, and which Het^{BB} group is optionally substituted by one or more R^{4d} substituents;
 R^{4b}, R^{4b'}, R^{4c} and R^{4d} represent, independently at each occurrence,

- 5 (a) halo,
- (b) CN,
- (c) C₁₋₁₂ alkyl, C₂₋₁₂ alkenyl, C₂₋₁₂ alkynyl, which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ, aryl and Het¹,
- 10 (d) Cy³, which Cy³ group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{6a}, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ, aryl and Het²,
- 15 (e) Het^a, which Het^a group is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-B⁶-R⁷ⁱ, aryl and Het³,
- 20 (f) OR⁸,
- (g) S(O)_rR^{9a},
- (h) S(O)₂N(R^{9b})(R^{9c}),
- (i) N(R^{9d})S(O)₂R^{9e},
- (j) N(R^{9f})(R^{9g}),
- 25 (k) B⁷-C(G¹)-B⁸-R^{9h},
- (l) =O,
- (m) =S,

rr² represents 0 to 2;

30 ss and tt independently represent, at each occurrence 0 or 1, provided that ss and tt do not both represent 0;
 L¹ and L² both represent direct bonds;

G¹ represents, independently at each occurrence, O, S or NR^{5j};

R⁸ represents, independently at each occurrence,

H,

35 Cy³, Het^a, aryl^a, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, C₃₋₈ cycloalkyl, which latter seven groups are optionally substituted by one or more substituents selected from halo, -CN, C₃₋₆ cycloalkyl, aryl, Het^t, -C(O)OR¹⁰, -C(O)R¹¹, -C(O)N(R^{N1})(R^{N2}), S(O)_rR^{9aa}, S(O)₂N(R^{9ba})(R^{9ca}), N(R^{9da})S(O)₂R^{9ea} and N(R^{9fa})(R^{9ga});

Cy³ represents, independently at each occurrence, a 3- to 6-membered aromatic, fully saturated or partially unsaturated carbocyclic ring;

40 Het^a represents, independently at each occurrence, a 3- to 6-membered heterocyclic ring that may be aromatic, fully saturated or partially unsaturated and which contains one or more heteroatoms selected from O, S and N;
 R¹⁰ and R¹¹ independently represent

- 45 (a) H,
- (b) C₁₋₆ alkyl optionally substituted by one or more substituents selected from halo, aryl, -N(R^{N3})(R^{N4}) and -OR^a,
- (c) aryl or
- (d) C₃₋₇ cycloalkyl (which group is optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy);

50 B¹ to B⁸ independently represent, at each occurrence, a direct bond, O, S or N(R^{N3});
 each aryl^a independently represents a C₆₋₁₄ carbocyclic aromatic group, which group may comprise one, two or three rings;

55 each aryl independently represents a C₆₋₁₄ carbocyclic aromatic group, which group may comprise one, two or three rings and may be substituted by one or more substituents selected from halo,

C₁₋₆ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N4})(R^{N5}) and -OR^a, and

-OR^a;

Het¹ to Het⁴ independently represent 4- to 14-membered heterocyclic groups containing one or more heteroatoms selected from O, S and N, which heterocyclic groups may comprise one, two or three rings and may be substituted by one or more substituents selected from

halo,

C₁₋₆ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N6})(R^{N7}) and -OR^a, and

-OR^a;

R^{N1} to R^{N7} independently represent

H,

C₁₋₆ alkyl or C₃₋₆ cycloalkyl, which latter two groups are optionally substituted by one or more substituents selected from halo and -OR^a;

R^a represents, independently at each occurrence,

(a) H;

(b) C₁₋₁₂ alkyl, C₂₋₁₂ alkenyl, C₂₋₁₂ alkynyl, C₃₋₁₂ cycloalkyl, C₄₋₁₂ cycloalkenyl, which latter five groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₃₋₈ cycloalkyl (which latter four groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{12a}, S(O)_qR^{12b}, S(O)₂N(R^{12c})(R^{12d}), N(R^{12e})S(O)₂R^{12f}, N(R^{12g})(R^{12h}), B⁹-C(G²)-B¹⁰-R¹²ⁱ, aryl¹ and Het^b, and which C₃₋₁₂ cycloalkyl or C₄₋₁₂ cycloalkenyl groups may additionally be substituted by =O,

(c) S(O)_qR^{13a},

(d) S(O)₂N(R^{13b})(R^{13c}) or

(e) C(O)-B¹¹-R^{13d};

R^{5a} to R^{5j}, R^{6a} to R⁶ⁱ, R^{7a} to R⁷ⁱ, R^{9a} to R^{9h}, R^{9aa} to R^{99a}, R^{12a} to R¹²ⁱ and R^{13a} to R^{13d} independently represent, at each occurrence,

(a) H,

(b) C₁₋₁₀ alkyl, C₂₋₁₀ alkenyl, C₂₋₁₀ alkynyl which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₃₋₆ cycloalkyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy), OR^{5aa}, S(O)_qR^{5ab}, S(O)₂N(R^{5ac})(R^{5ad}), N(R^{5ae})S(O)₂R^{5af}, N(R^{5ag})(R^{5ah}), B¹²-C(G²)-B¹³-R^{5ai}, aryl¹ and Het^c;

(c) C₃₋₁₀ cycloalkyl, or C₄₋₁₀ cycloalkenyl (which latter two groups are optionally substituted by one or more substituents selected from halo, OH, =O, C₁₋₆ alkyl and C₁₋₆ alkoxy),

(d) Het^d;

G² represents, independently at each occurrence, O, S, or NR^{5aj};

R^{5aa} to R^{5aj} independently represent at each occurrence,

(a) H,

(b) C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy),

(c) C₃₋₆ cycloalkyl, or C₄₋₆ cycloalkenyl (which latter two groups are optionally substituted by one or more substituents selected from halo, OH, =O, C₁₋₄ alkyl and C₁₋₄ alkoxy),

(d) Het^e,

or R^{5ag} and R^{5ah} may represent, together with the nitrogen atom to which they are attached, a 3- to 10-membered heterocyclic ring that may be aromatic, fully saturated or partially unsaturated and which may additionally contain one or more heteroatoms selected from O, S and N, which heterocyclic ring is optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy);

B⁹ to B¹³ independently represent a direct bond, O, S or N(R^{N8});

aryl¹ represents, independently at each occurrence, a C₆₋₁₀ carbocyclic aromatic group, which group may comprise one or two rings and may be substituted by one or more substituents selected from halo,

C₁₋₆ alkyl, which latter group is optionally substituted by one or more substituents selected from halo, -N(R^{N10})(R^{N11}) and C₁₋₆ alkoxy (which latter substituent is optionally substituted by one or more halo atoms), and C₁₋₆ alkoxy (which latter substituent is optionally substituted by one or more halo atoms); R^{N8}, R^{N10} and R^{N11} independently represent

H,

C₁₋₆ alkyl or C₃₋₆ cycloalkyl, which latter two groups are optionally substituted by one or more halo atoms; Het^b represents a 5- or 6-membered that may be aromatic, fully saturated or partially unsaturated and which contains one or more heteroatoms selected from O, S and N, which heterocyclic group may be substituted by one or more substituents selected from halo, =O and C₁₋₆ alkyl;

Het^c to Het^e independently represent, a 3- to 6-membered heterocyclic ring that may be aromatic, fully saturated or partially unsaturated and which contains one or more heteroatoms selected from O, S and N, which Het^c to Het^e groups are optionally substituted by one or more substituents selected from halo, nitro, CN, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl (which latter three groups are optionally substituted by one or more substituents selected from OH, =O, halo, C₁₋₄ alkyl and C₁₋₄ alkoxy);

q and r independently represent at each occurrence 0, 1 or 2; and

unless otherwise specified alkyl, alkenyl, alkynyl, cycloalkyl and the alkyl part of alkoxy groups may be substituted by one or more halo atoms;

or a pharmaceutically acceptable salt or solvate thereof.

2. A compound as claimed in Claim 1, wherein R^{4b} and R^{4b'} represent, independently at each occurrence

(a) halo,

(b) CN,

(c) C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, which latter three groups are optionally substituted by one or more substituents selected from halo, nitro, CN, OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ and Het¹ (e.g. one or more substituents selected from nitro, CN, OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ and Het¹),

(d) Cy³, which Cy³ group is optionally substituted by one or more substituents selected from nitro, CN, OR^{6a}, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ and Het₂,

(e) Het^a, which Het^a group is optionally substituted by one or more substituents selected from halo, nitro, CN, OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-B⁶-R⁷ⁱ and Het³,

(f) OR⁸,

(g) S(O)_rR^{9a},

(h) S(O)₂N(R^{9b})(R^{9c}),

(i) N(R^{9d})S(O)₂R^{9e},

(j) N(R^{9f})(R^{9g}) or

(k) B⁷-C(G¹)-B⁸-R^{9h},

wherein R^{5a} to R⁵ⁱ, R^{5a} to R⁶ⁱ, R^{7a} to R⁷ⁱ, R⁸, R^{9a} to R⁹ⁿ, Cy³, Het¹ to Het³, Het^a, B¹ to B⁸, G¹, q and r are as defined in Claim 1.

3. A compound as claimed in Claim 1 or Claim 2, wherein:

R^{4b'} and R^{4b} represent, independently at each occurrence, cyclopropyl, iodo, bromo, chloro, fluoro, ethyl, methyl, d₃-methyl, iso-propyl, -C=CH, phenyl, CF₃, CHF₂, CH₂F, CH₂CF₃, CF₂CF₃, CN, =O, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CF₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃, CH(CH₃)OH, C(CH₃)₃OH, CH₂CH₂OH, NH₂, N(CH₃)₂, N(H)CH₂CH₃, N(H)C(O)CH₃, C(O)CH₃, C(O)N(CH₃)₂, S(O)₂CH₃, S(O)CH₃, SCH₃, S(O)₂CF₃, azetidine, morpholine or dioxolane.

4. A compound as claimed in any one of Claims 1 to 3, wherein:

(A)

(1) R^{4b} represents, independently at each occurrence, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃, NH₂, NHCH(CH₃)₂, NHCH₃, NHCH₂CH₃, NHCH₂CH₃, NH(CH(CH₃)₂)₂, NH(CH₃)₂, NH(CH₂CH₃)₂ or NH(CH₂CH₃)₂;

(2) the sum of ss and tt is 1; and

(3) rr2 is 0; or

(B)

- (1) R^{4b} represents, independently at each occurrence, CH₂F or, particularly, cyclopropyl, chloro, fluoro, ethyl, methyl, CF₃, CHF₂, CH₂CF₃, CF₂CF₃, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, (CH₂)₃OH, CH₂OH or CH₂OCH₃;
 (2) ss and tt are both 1; and
 (3) rr2 is 0.

5. A compound as claimed in any one of Claims 1 to 4, wherein the compound of formula I is selected from the list comprising:

- (Ixi) 6-(2-chloropyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (Ixxvi) 6-(2-chloro-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (Ixxix) 6-(2-methoxy-6-(trifluoromethyl)pyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (Ixxxvi) 6-(2-methoxypyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (xcvi) 6-(2,6-dimethoxypyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (xcvii) 6-(2,6-dimethylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (xcviii) 5-phenyl-6-(2-(trifluoromethyl)pyridin-4-yl)-1,2,4-triazin-3-amine;
 (xcix) 6-(2-cyclopropylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (cii) 6-(2,6-dichloropyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 (cix) 6-(2-chloro-6-methylpyridin-4-yl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
 (cxiii) 6-(2-chloropyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (cxiv) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (cxvii) 5-(4-chlorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 (cxviii) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-chlorophenyl)-1,2,4-triazin-3-amine;
 (cxxi) 5-(3-chlorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 (cxxii) 6-(2-chloro-6-methylpyridin-4-yl)-5-(3-chlorophenyl)-1,2,4-triazin-3-amine;
 (cxxiv) 4-(3-amino-6-(2-chloro-6-methylpyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile;
 (cxxvi) 5-(3-chloro-5-fluorophenyl)-6-(2-chloro-6-methylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (cxxix) 6-(2-chloro-6-methylpyridin-4-yl)-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine;
 (cxxxii) 5-(3-chloro-4-fluorophenyl)-6-(2-chloro-6-methylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (cxxxiii) 5-(3-chloro-4-fluorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 (cxxxvi) 6-(2-chloro-6-methylpyridin-4-yl)-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine;
 (cxxxvii) 6-(2-chloropyridin-4-yl)-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine;
 (cxl) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-(methoxymethyl)phenyl)-1,2,4-triazin-3-amine;
 (cxli) 6-(2,6-dimethylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 (clvii) 4-(3-amino-6-(2-chloropyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile;
 (clix) 6-(2-chloropyridin-4-yl)-5-(4-(methoxymethyl)phenyl)-1,2,4-triazin-3-amine;
 (ccviii) 5-(3-chloro-5-fluorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 (ccix) 6-(2-chloropyridin-4-yl)-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine;
 (ccxi) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-3-amine;
 (ccxii) 6-(2-chloropyridin-4-yl)-5-(4-(difluoromethoxy)phenyl)-1,2,4-triazin-3-amine;
 (ccxvii) 5-(3-chloro-5-fluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (ccxviii) 5-(3,5-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (ccxix) 5-(3,4-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (ccxx) 5-(3-chloro-4-fluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (ccxxi) 5-(4-(difluoromethoxy)phenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (ccxxii) 6-(2,6-dimethylpyridin-4-yl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
 (ccxxiii) 5-(4-chlorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (ccxxiv) 4-(3-amino-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile;
 (ccxxv) 5-(3-chlorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
 (ccxxvi) 6-(2,6-dimethylpyridin-4-yl)-5-(4-(methoxymethyl)phenyl)-1,2,4-triazin-3-amine;
 (ccxxxix) 5-(3-fluorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 (ccxli) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(3,4-difluorophenyl)-1,2,4-triazin-3-amine;
 (ccxlii) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(3,5-difluorophenyl)-1,2,4-triazin-3-amine;
 (ccxliii) 6-[2-(ethylamino)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
 (ccxliv) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
 (ccxlv) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;

(ccxli) 6-[2-[ethyl(methyl)amino]-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(ccxlvii) 6-[2-(dimethylamino)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(ccxlviii) 1-[6-(2,6-dimethylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
(ccxlix) 6-[2-d3-methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
5 (ccl) 5-(4-fluorophenyl)-6-[2-d3-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(ccli) 6-(2,6-dimethylpyridin-4-yl)-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
(cclii) 6-(2-chloro-6-methylpyridin-4-yl)-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
(ccliii) 6-(2,6-dimethylpyridin-4-yl)-5-(4-methoxyphenyl)-1,2,4-triazin-3-amine;
(ccliv) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-methoxyphenyl)-1,2,4-triazin-3-amine;
10 (cclv) 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclvi) 6-[2-chloro-6-(difluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclvii) 6-[2-chloro-6-(fluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclviii) 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
(cclix) 6-[2,6-bis(fluoromethyl)pyridine-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
15 (cclx) 6-[2-(fluoromethyl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxi) 6-(2-chloro-6-methylpyridin-4-yl)-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine;
(cclxii) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
(cclxiii) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine;
(cclxiv) 6-[2-cyclopropyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
20 (cclxv) 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxvi) 6-(2-cyclopropyl-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
(cclxvii) 5-(2-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxviii) 5-(3-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxix) 5-(4-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
25 (cclxx) 5-(2,5-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxxi) 5-(3,4-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxxii) 5-(3,5-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
(cclxxiii) 6-[2-(azetidin-1-yl)-6-(trifluoromethyl)pyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
(cclxxiv) 6-[2-methyl-6-(morpholin-4-yl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
30 (cclxxv) 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-ethylphenyl)-1,2,4-triazin-3-amine;
(cclxxvi) 5-(2,5-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
(cclxxvii) 6-(2,6-dimethylpyridin-4-yl)-5-(4-methylphenyl)-1,2,4-triazin-3-amine;
(cclxxviii) 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
(cclxxix) 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
35 (cclxxxii) 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxxxiii) 6-[2,6-bis(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxxxv) 6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxxxvii) 6-[2-(dimethylamino)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(cclxxxviii) 6-(2-bromo-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
40 (cclxxxix) 6-(2,6-dimethyl-1-oxidopyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
(ccxc) 4-(3-amino-5-phenyl-1,2,4-triazin-6-yl)-6-methylpyridine-2-carbonitrile;
(ccxcv) 6-[2-bromo-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
(ccc) 6-(2-methyl-6-d3-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
(cccii) 6-[2-(azetidin-1-yl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
45 (ccci) 6-[2-(azetidin-1-yl)-6-methylpyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine; and
(ccciv) 6-[2-(azetidin-1-yl)-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine.

6. A compound as claimed in any one of Claims 1 to 5, wherein the compound of formula I is selected from:

50 6-(2-chloropyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
6-(2-chloro-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
6-(2-methoxypyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
6-(2,6-dimethylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
5-phenyl-6-(2-(trifluoromethyl)pyridin-4-yl)-1,2,4-triazin-3-amine;
55 6-(2-cyclopropylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
6-(2,6-dichloropyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
6-(2-chloro-6-methylpyridin-4-yl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
5-(4-chlorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;

5-(3-chlorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 5-(3-chloro-4-fluorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 6-(2,6-dimethylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 5-(3,5-difluorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
 6-(2,6-dimethylpyridin-4-yl)-5-(3-fluorophenyl)-1,2,4-triazin-3-amine;
 5-(4-chlorophenyl)-6-(2,6-dimethylpyridin-4-yl)-1,2,4-triazin-3-amine;
 5-(3-fluorophenyl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine;
 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 6-[2-d3-methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
 6-(2-chloro-6-methylpyridin-4-yl)-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(2-fluorophenyl)-1,2,4-triazin-3-amine;
 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-(2,5-difluorophenyl)-1,2,4-triazin-3-amine;
 6-(2-cyclopropyl-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine;
 5-(2-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
 5-(3-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
 5-(4-fluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
 5-(3,5-difluorophenyl)-6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
 6-[2-chloro-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
 6-[2-bromo-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
 6-(2-azetidin-1-yl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine;
 5-(4-fluorophenyl)-6-[2-d3-methyl-6-(trifluoromethyl)pyridin-4-yl]-1,2,4-triazin-3-amine;
 6-[2-(difluoromethyl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
 6-[2-chloro-6-(difluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
 6-[2-chloro-6-(fluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
 6-[2-(fluoromethyl)-6-methylpyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine;
 6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine; and
 6-(2-bromo-6-methylpyridin-4-yl)-5-phenyl-1,2,4-triazin-3-amine.

7. A compound selected from the group comprising:

6-(2-chloro-6-methylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine and
 6-[2-methyl-6-(trifluoromethyl)pyridin-4-yl]-5-phenyl-1,2,4-triazin-3-amine,
 or a pharmaceutically acceptable salt or solvate thereof.

8. A compound as claimed in any one of Claims 1 to 7, wherein:

B represents a Cy^{BB} or Het^{BB} group, which group is either unsubstituted or is substituted by one or more substituents selected from fluoro, CN, OR⁸ or C₁₋₆ alkyl optionally substituted by one or more substituents selected from halo and OR^{5a}, wherein R^{5a} and R⁸ are as defined in Claim 1
 optionally wherein B represents a Cy^{BB} or Het^{BB} group, which group is either unsubstituted or is substituted by fluoro at the 4-position relative to the point of attachment to the triazine ring.

9. A compound of formula Iyd as defined in any one of Claims 1 to 7 for use in the treatment of a condition or disorder ameliorated by the inhibition of the A₁ receptor or the A_{2a} receptor wherein the condition or disorder is selected from: heart failure; kidney failure; oedema; cancer; diabetes; diarrhea; macular degeneration; depression; cognitive function diseases; a neurodegenerative disease; an attention related disorder; extra pyramidal syndrome; a disorder of abnormal movement; cirrhosis; liver fibrosis; fatty liver; dermal fibrosis; a sleep disorder; stroke; brain injury or neuroinflammation; and addictive behaviour.

10. The use of a compound of formula Iyd as defined in any one of Claims 1 to 7 for the manufacture of a medicament for the treatment of a condition or disorder ameliorated by the inhibition of the A₁ receptor or the A_{2a} receptor wherein the condition or disorder is selected from: heart failure; kidney failure; oedema; cancer; diabetes; diarrhea; macular degeneration; depression; cognitive function diseases; a neurodegenerative disease; an attention related disorder; extra pyramidal syndrome; a disorder of abnormal movement; cirrhosis; liver fibrosis; fatty liver; dermal fibrosis; a sleep disorder; stroke; brain injury or neuroinflammation; and addictive behaviour.

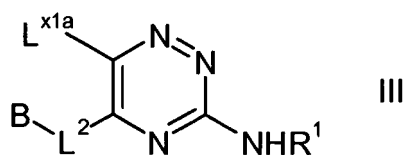
11. Use as claimed in Claim 10, or compound for use as claimed in Claim 9, wherein the condition or disorder is

ameliorated by the inhibition of the A_{2a} receptor and is selected from depression; cognitive function diseases; a neurodegenerative disease; an attention related disorder; extra pyramidal syndrome; a disorder of abnormal movement; cirrhosis; liver fibrosis; fatty liver; dermal fibrosis; a sleep disorder; stroke; brain injury or neuroinflammation; and addictive behaviour.

12. Use as claimed in Claim 10 or Claim 11, or compound for use as claimed in Claim 9 or Claim 11, wherein the condition or disorder is migraine.
13. Use as claimed in Claim 10 or Claim 11, or compound for use as claimed in Claim 9 or Claim 11, wherein the neurodegenerative disease is Parkinson's disease, Huntington's disease, Alzheimer's disease or amyotrophic lateral sclerosis.
14. Use, or compound for use as claimed in Claim 13, wherein the condition or disorder ameliorated by the inhibition of the A_{2a} receptor is Parkinson's disease.
15. Use as claimed in Claim 10 or Claim 11, or compound for use as claimed in Claim 9 or Claim 11, wherein the condition or disorder ameliorated by the inhibition of the A_{2a} receptor is addictive behaviour or ADHD.
16. Compound for use as claimed in Claim 9 or Claim 11, or use as claimed in Claim 10 or Claim 11, wherein the condition or disorder ameliorated by the inhibition of the A_1 receptor is mitigation of kidney damage caused by acute renal failure, oedema, heart failure, chronic renal disease and/or cirrhosis.
17. A compound of formula Iyd as defined in any one of Claims 1 to 7 for use in mitigating kidney damage caused by acute renal failure, oedema, heart failure, chronic renal disease and/or cirrhosis.
18. The use of compound of formula Iyd as defined in any one of Claims 1 to 7 for the manufacture of a medicament for mitigating kidney damage caused by acute renal failure, oedema, heart failure, chronic renal disease and/or cirrhosis.
19. A compound of formula Iyd as claimed in any one of Claims 1 to 7 for use in medicine.
20. A pharmaceutical formulation including a compound of formula Iyd as defined in any one of Claims 1 to 7 in admixture with a pharmaceutically acceptable adjuvant, diluent or carrier.
21. A process for the preparation of a compound of formula Iyd as defined in any one of Claims 1 to 7, which process comprises:

(i)

(a) reaction of a compound of formula III,

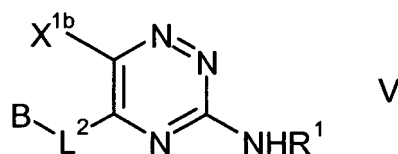


wherein L^{x1a} represents a metal halide, $-Sn(R^{x1})_3$, an alkyl-cyclotriboroxane derivative, $-B(OH)_2$, $-B(OR^{x1})_2$, or an organosilane, wherein each R^{x1} mentioned herein independently represents a C_{1-6} alkyl group, or, in the case of $-B(OR^{x1})_2$, the two R^{x1} groups may be linked together to form a 4- to 6-membered cyclic group, L^2 represents a direct bond, R^1 represents H, and B is as defined in Claim 1, with a compound of formula IV,



wherein X^{1a} represents a suitable leaving group, and A represents the requisite substituted pyridine-4-yl group as defined in Claim 1;

(b) reaction of a compound of formula V,



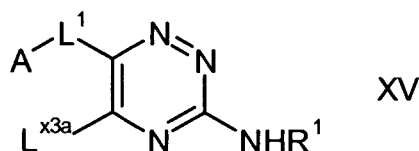
wherein X^{1b} represents a suitable leaving group, L^2 represents a direct bond, R^1 represents H, and B is as defined in Claim 1, with a compound of formula VI,



wherein L^{x1b} represents a metal halide, $-\text{Sn}(\text{R}^{x1})_3$, an alkyl-cyclotriboroxane derivative, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$, or an organosilane, wherein each R^{x1} is as defined above, and A represents the requisite substituted pyridine-4-yl group as defined in Claim 1;

(ii)

(a) reaction of a compound of formula XV,

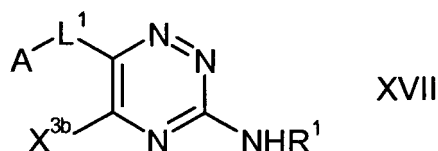


wherein L^{x3a} represents a metal halide, $-\text{Sn}(\text{R}^{x1})_3$, an alkyl-cyclotriboroxane derivative, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$, or an organosilane, in which each R^{x1} is as defined above, L^1 represents a direct bond, R^1 represents H, and A represents the requisite substituted pyridine-4-yl group as defined in Claim 1, with a compound of formula XVI,



wherein X^{3a} represents a suitable leaving group and B is as defined in Claim 1;

(b) reaction of a compound of formula XVII,

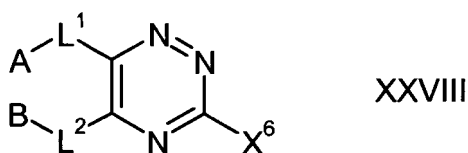


wherein X^{3b} represents a suitable leaving group, L^1 represents a direct bond, R^1 represents H, and A represents the requisite substituted pyridine-4-yl group as defined in Claim 1, with a compound of formula XVIII,



wherein L^{x3b} represents a metal halide, $-\text{Sn}(\text{R}^{x1})_3$, an alkyl-cyclotriboroxane derivative, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$, or an organosilane, in which each R^{x1} is as defined above, and B is as defined in Claim 1;

(iii) reaction of a compound of formula XXVIII,



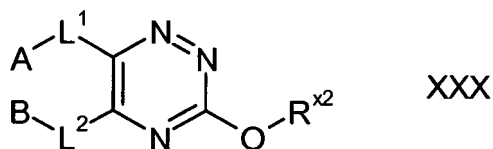
wherein X^6 represents a suitable leaving group such, L^1 and L^2 represent direct bonds, A represents the requisite substituted pyridine-4-yl group as defined in Claim 1, and B is as defined in Claim 1, with a compound of formula

XXIX,



wherein R^1 is H;

(iv) reaction of a compound of formula XXX,



wherein R^{x2} represents a suitable leaving group, L^1 and L^2 represent direct bonds, A represents the requisite substituted pyridine-4-yl group as defined in Claim 1, and B is as defined in Claim 1, or a protected derivative thereof, with a compound of formula XXIX, wherein R^1 is H;

(v) reaction of a compound of formula XXXI,

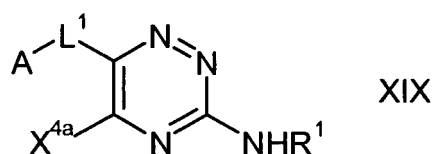


wherein A represents the requisite substituted pyridine-4-yl group as defined in Claim 1, and B is as defined in Claim 1, with a compound of formula XXXII,



wherein R^1 is H;

(vii) for compounds of formula Iy in which B represents a nitrogen-containing Het^{BB} group that is attached *via* a nitrogen atom within the ring system, reaction of a compound of formula XIX,



wherein X^{4a} represents a suitable leaving group, L^1 represents a direct bond, R^1 represents H, and A represents the requisite substituted pyridine-4-yl group as defined in Claim 1, with a compound of formula XXXIV,

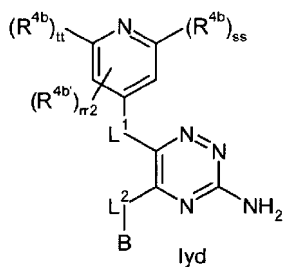


wherein Het^{B1} takes the same definition as Het^{BB} as defined above, except that Het^{B1} is a nitrogen-containing heterocycle that is attached to the H-atom depicted for the compound of formula XXXIV *via* a nitrogen atom in the heterocycle; and

(ix) for compounds of formula Iy in which one of $R^{4b'}$, R^{4b} , R^{4c} and R^{4d} represents -OH, reaction of a compound of formula Iy in which one of $R^{4b'}$, R^{4b} , R^{4c} and R^{4d} represents -OR^{4y}, wherein R^{4y} represents a C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl or C₃₋₆ cycloalkyl, which groups are optionally substituted by one or more substituents selected from halo, C₁₋₄ alkyl and aryl, with a dealkylating agent.

Patentansprüche

1. Eine Verbindung der Formel Iy_d,



wobei:

B eine Cy^{BB} oder Het^{BB} repräsentiert;

Cy^{BB} repräsentiert Phenyl, gegebenenfalls durch ein oder mehrere R^{4c} Substituenten substituiert;

Het^{BB} steht für eine 6-gliedrige aromatische heterocyclische Gruppe, die ein oder mehrere N-Atome enthält, und deren Het^{BB}-Gruppe gegebenenfalls durch ein oder mehrere R^{4d}-Substituenten substituiert ist;

R^{4b'}, R^{4b''}, R^{4c} und R^{4d} repräsentieren unabhängig voneinander bei jedem Vorkommen

(a) Halogen,

(b) CN,

(c) C₁₋₁₂-Alkyl, C₂₋₁₂-Alkenyl, C₂₋₁₂-Alkynyl, wobei die letzteren drei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: Halogen, Nitro, CN, C₁₋₆-Alkyl, C₂₋₆-Alkenyl, C₂₋₆-Alkynyl (wobei letztere drei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: OH, =O, Halogen, C₁₋₄-Alkyl und C₁₋₄-Alkoxy), OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c}) (R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C (G¹)-B²-R⁵ⁱ, Aryl und Het¹

(d) Cy³, welche Cy³-Gruppe gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: Halogen, Nitro, CN, C₁₋₆-Alkyl, C₆-Alkenyl, C₂₋₆-Alkynyl (wobei letztere drei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: OH, =O, Halogen, C₁₋₄-Alkyl und C₁₋₄-Alkoxy), OR^{6a}, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C (G¹)-B⁴-R⁶ⁱ, Aryl und Het².

(e) Het^a, welche Het^a-Gruppe durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden kann: Halogen, Nitro, CN, C₁₋₆-Alkyl, C₂₋₆-Alkenyl, C₂₋₆-Alkynyl (wobei letztere drei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: OH, =O, Halogen, C₁₋₄-Alkyl und C₁₋₄-Alkoxy), OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C (G¹)-B⁶-R⁷ⁱ, Aryl und Het³.

(f) OR⁸,

(g) S(O)_rR^{9a},

(h) S(O)₂N(R^{9b})(R^{9c}),

(i) N(R^{9a})S(O)₂R^{9e},

(j) N(R^{9f}) (R^{9g}),

(k) B⁷-C(G¹)-B⁸-R^{9h},

(l) =O,

(m) =S,

rr₂ steht für 0 bis 2;

ss und tt stehen unabhängig voneinander bei jedem Vorkommen für 0 oder 1, vorausgesetzt, dass ss und tt nicht beide für 0 stehen;

L¹ und L² stehen beide für direkte Bindungen;

G¹ steht bei jedem Vorkommen unabhängig für O, S oder NR^{5j};

R⁸ steht bei jedem Vorkommen unabhängig für

H,

Cy³, Het^a, aryl^a, C₁₋₈-Alkyl, C₂₋₈-Alkenyl, C₂₋₈-Alkynyl, C₃₋₈-Cycloalkyl, wobei die letztgenannten sieben Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: Halogen, -CN, C₃₋₆-Cycloalkyl, Aryl, Het⁴, -C(O)OR¹⁰, -C(O)R¹¹, -C(O)N(R^{N1})(R^{N2}), S(O)_rR^{9aa},

$S(O)_2N(R^{9ba})(R^{9ca})$, $N(R^{9da})S(O)2R^{9ea}$ und $N(R^{9fa})(R^{9ga})$;

Cy^3 steht bei jedem Vorkommen unabhängig für einen 3- bis 6-gliedrigen aromatischen, vollständig gesättigten oder teilweise ungesättigten carbocyclischen Ring;

Het^a steht bei jedem Vorkommen unabhängig für einen 3- bis 6-gliedrigen heterocyclischen Ring, der aromatisch, vollständig gesättigt oder teilweise ungesättigt sein kann, und der ein oder mehrere Heteroatome aus folgender Auswahl enthält: O, S und N;

R^{10} und R^{11} stehen unabhängig voneinander für

(a) H,

(b) C_{1-6} -Alkyl, das gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden kann: Halogen, Aryl, $-N(R^{N3})(R^{N4})$ und $-OR^a$.

(c) Aryl oder

(d) C_{3-7} -Cycloalkyl (wobei diese Gruppe gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden kann: OH, = O, Halogen, C_{1-4} -Alkyl und C_{1-4} -Alkoxy);

B^1 bis B^8 stehen unabhängig voneinander bei jedem Vorkommen für eine direkte Bindung, O, S oder $N(R^{N3})$; jedes Aryl³ steht unabhängig für eine C_{6-14} -carbocyclische aromatische Gruppe, welche Gruppe ein, zwei oder drei Ringe enthalten kann;

jedes Aryl steht unabhängig für eine C_{6-14} -carbocyclische aromatische Gruppe, welche Gruppe ein, zwei oder drei Ringe enthalten und von einem oder mehreren Substituenten aus folgender Auswahl substituiert werden kann:

Halogen,

C_{1-6} -Alkyl, wobei letztere Gruppe gegebenenfalls durch einen oder mehrere Substituenten substituiert werden kann,

der aus folgender Auswahl stammt: Halogen, $-N(R^{N4})(R^{N5})$ und $-OR^a$ und $-OR^a$;

Het¹ bis Het⁴ stehen unabhängig für 4- bis 14-gliedrige heterocyclische Gruppen, die jeweils ein oder mehrere Heteroatome aus O, S und N enthalten, wobei diese heterocyclischen Gruppen ein, zwei oder drei Ringe enthalten können und durch eine oder mehrere Substituenten aus folgender Auswahl substituiert werden können:

Halogen,

C_{1-6} -Alkyl, wobei letztere Gruppe gegebenenfalls durch einen oder mehrere Substituenten substituiert werden kann,

der folgender Auswahl zu entnehmen ist: Halogen, $-N(R^{N6})(R^{N7})$ und $-OR^a$, und $-OR^a$;

R^{N1} bis R^{N7} stehen unabhängig für

H,

C_{1-6} -Alkyl oder C_{3-6} -Cycloalkyl, wobei die beiden letztgenannten Gruppen gegebenenfalls durch einen oder mehreren Substituenten aus folgender Auswahl substituiert werden können: Halogen und $-OR^a$;

R^a steht bei jedem Vorkommen unabhängig für

(a) H;

(b) C_{1-12} -Alkyl, C_{2-12} -Alkenyl, C_{2-12} -Alkinyl, C_{3-12} -Cycloalkyl, C_{4-12} -Cycloalkenyl, wobei diese fünf letztgenannten Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: Halogen, Nitro, CN, C_{1-6} -Alkyl, C_{2-6} -Alkenyl, C_{2-e} -Alkinyl, C_{3-8} -Cycloalkyl (wobei letztere vier Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: OH, = O, Halogen, C_{1-4} -Alkyl und C_{1-4} -Alkoxy), OR^{12a} , $S(O)_qR^{12b}$, $S(O)_2N(R^{12c})(R^{12d})$, $N(R^{2e})S(O)2R^{12f}$, $N(R^{12s})(R^{12h})$, $B^9-C(G^2)-B^{10}-R^{12i}$, Aryl¹ und Het^b und deren C_{3-12} -Cycloalkyl oder C_{4-12} -Cycloalkenyl-Gruppen zusätzlich substituiert sein können durch = O,

(c) $S(O)_rR^{13a}$,

(d) $S(O)_2N(R^{13b})(R^{13c})$ oder

(e) $C(O)-B^{11}-R^{13d}$;

R^{5a} to R^{5j} , R^{68} to R^{6i} , R^{7a} to R^{7i} , R^{9a} to R^{9h} , R^{9aa} to R^{9ga} , R^{12a} to R^{12i} und R^{13a} to R^{13d} repräsentieren

unabhängig voneinander bei jedem Vorkommen

(a) H,

(b) C₁₋₁₀-Alkyl, C₂₋₁₀-Alkenyl, C₂₋₁₀-Alkynyl, wobei diese die letztgenannten Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: Halogen, Nitro, CN, C₁₋₆-Alkyl, C₂₋₆-Alkenyl, C₂₋₆-Alkynyl, C₃₋₆-Cycloalkyl (wobei letztere drei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: OH, = O, Halogen, C₁₋₄-Alkyl und C₁₋₄-Alkoxy), OR^{5aa}, S(O)_qR^{5ab}, S(O)₂N(R^{5ac})(R^{5ad}), N(R^{5ae})S(O)₂R^{5af}, N(R^{5ag})(R^{5ah}), B¹²-C(G²)-B¹³-R^{5ai}, Aryl¹ und Het^c,

(c) C₃₋₁₀-Cycloalkyl oder C₄₋₁₀-Cycloalkenyl (wobei letztere zwei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können:

Halogen, OH, =O, C₁₋₆-Alkyl und C₁₋₆-Alkoxy),

(d) Het^d;

G² steht bei jedem Vorkommen unabhängig für O, S, oder NR^{5aj};

R^{5aa} bis R^{5aj} stehen bei jedem Vorkommen unabhängig für

(a) H,

(b) C₁₋₄-Alkyl, C₂₋₄-Alkenyl, C₂₋₄-Alkynyl, wobei diese drei letztgenannten Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: Halogen, Nitro, CN, C₁₋₄-Alkyl, C₂₋₄-Alkenyl, C₂₋₄-Alkynyl (wobei diese letzteren drei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: OH, = O, Halogen, C₁₋₄-Alkyl und C₁₋₄-Alkoxy),

(c) C₃₋₆-Cycloalkyl oder C₄₋₆-Cycloalkenyl (wobei letztere zwei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können:

Halogen, OH, =O, C₁₋₄-Alkyl und C₁₋₄-Alkoxy),

(d) Het^e,

oder R^{5ag} und R^{5ah} können, zusammen mit dem Stickstoffatom, an das sie gebunden sind, einen 3- bis 10-gliedrigen heterocyclischen Ring repräsentieren, der aromatisch, vollständig gesättigt oder teilweise ungesättigt sein kann und zusätzlich ein oder mehrere Heteroatome aus O, S und N enthalten kann, wobei dieser heterocyclische Ring gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden kann: Halogen, Nitro, CN, C₁₋₆-Alkyl, C₂₋₆-Alkenyl, C₂₋₆-Alkynyl (wobei die letztgenannten drei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: OH, = O, Halogen, C₁₋₄-Alkyl und C₁₋₄-Alkoxy),

B⁹ bis B¹³ stehen unabhängig voneinander für eine direkte Bindung, O, S oder N(R^{N8});

Aryl¹ steht bei jedem Vorkommen unabhängig für eine C₆₋₁₀-carbocyclische aromatische Gruppe, wobei diese Gruppe einen oder zwei Ringe umfassen und durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden kann:

Halogen,

C₁₋₆-Alkyl, wobei letztere Gruppe gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden kann: Halogen, -N(R^{N10})(R^{N11}) und C₁₋₆-Alkoxy (wobei letzterer Substituent gegebenenfalls durch ein oder mehrere Halogenatome substituiert ist), und

C₁₋₆-Alkoxy (wobei letztere Substituent gegebenenfalls durch ein oder mehrere Halogenatome substituiert ist);

R^{N8}, R^{N10} and R^{N11} stehen unabhängig für

H,

C₁₋₆-Alkyl oder C₃₋₆-Cycloalkyl, wobei die beiden letztgenannten Gruppen durch ein oder mehrere Halogenatome substituiert sind;

Het^b steht für einen 5- oder 6-gliedrigen Ring, der aromatisch, vollständig gesättigt oder teilweise ungesättigt sein kann, und der ein oder mehrere Heteroatome aus O, S und N enthält, wobei die heterocyclische Gruppe durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden kann Halogen, = O und

C₁₋₆-Alkyl,

Het^c bis Het^e stehen unabhängig für einen 3- bis 6-gliedrigen heterocyclischen Ring, der aromatisch, vollständig gesättigt oder teilweise ungesättigt sein kann und ein oder mehrere Heteroatome aus O, S und N enthält, wobei die Het^c- bis Het^e-Gruppen durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden können: Halogen, Nitro, CN, C₁₋₆-Alkyl, C₂₋₆-Alkenyl, C₂₋₆-Alkynyl (wobei letztere drei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden: OH, =O, Halogen, C₁₋₄-Alkyl und C₁₋₄-Alkoxy),

q und r stehen unabhängig bei jedem Vorkommen für 0, 1 oder 2; und

sofern nicht anders angegeben, können Alkyl, Alkenyl, Alkynyl, Cycloalkyl und der Alkylteil von Alkoxy-Gruppen durch ein oder mehrere Halogenatome;

oder ein pharmazeutisch annehmbares Salz oder Solvat davon substituiert werden.

2. Eine Verbindung nach Anspruch 1, wobei R^{4b} und R^{4b} unabhängig voneinander bei jedem Vorkommen stehen für:

(a) Halogen,

(b) CN,

(c) C₁₋₄-Alkyl, C₂₋₄-Alkenyl, C₂₋₄ Alkynyl, wobei die letztgenannten drei Gruppen gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden: Halogen, Nitro, CN, OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ und Het¹ (z.B. ein oder mehrere Substituenten aus folgender Auswahl: Nitro, CN, OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ und Het¹),

(d) Cy³, wobei diese Cy³ Gruppe gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert wird: Nitro, CN, OR⁶³, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ und Het²,

(e) Het^a, wobei diese Het^a-Gruppe durch einen oder mehrere Substituenten aus folgender Auswahl substituiert werden kann: Halogen, Nitro, CN, OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-B⁶-R⁷ⁱ und Het³,

(f) OR⁸,

(g) S(O)_rR^{9a},

(h) S(O)₂N(R^{9b})(R^{9c}),

(i) N(R^{9d})S(O)₂R^{9e},

(j) N(R^{9f})(R^{9g}) oder

(k) B⁷-C(G¹)-B⁸-R^{9h},

wobei R^{5a} bis R⁵ⁱ, R^{6a} bis R⁶ⁱ, R^{7a} bis R⁷ⁱ, R⁸, R^{9a} bis R^{9h}, Cy³, Het¹ bis Het³, Het^a, B¹ bis B⁸, G¹, q und r wie in Anspruch 1 definiert.

3. Eine Verbindung gemäß Anspruch 1 oder Anspruch 2, wobei:

R^{4b'} und R^{4b} unabhängig bei jedem Vorkommen stehen für: Cyclopropyl, Iod, Brom, Chlor, Fluor, Ethyl, Methyl, d3-Methyl, Iso-Propyl, -C=CH, phenyl, CF₃, CHF₂, CH₂F, CH₂CF₃, CF₂CF₃, CN, =O, OH, OCH(CH₃)₂, OCH₃, OCH₂CH₃, OCH₂F, OCHF₂, OCH₂CF₃, OCF₃, (CH₂)₃OH, CH₂OH oder CH₂OCH₃, CH(CH₃)OH, C(CH₃)₃OH, CH₂CH₂OH,

NH₂, N(CH₃)₂, N(H)CH₂CH₃, N(H)C(O)CH₃, C(O)CH₃, C(O)N(CH₃)₂, S(O)₂CH₃, S(O)C*H₃, SCH₃, S(O)₂CF₃, Azetidin, Morpholin oder Dioxolan.

4. Eine Verbindung nach einem der Ansprüche 1 bis 3, wobei:

(A)

(1) R^{4b} bei jedem Vorkommen steht für: OH, OCH(CH₃)₂, OCH₃, OCH(CH₃)₂, OCH₂F, OCHF₂, OCH₂CH₃, OCH₂CF₃, OCH₃, OCF₃, (CH₂)₃OH, CH₂OH oder CH₂OCH₃, NH₂, NHCH(CH₃)₂, NHCH₃, NHCH₂CH₃, NHCH₂CH₃, NH(CH(CH₃)₂)₂, NH(CH₃)₂, NH(CH₂CH₃)₂ oder NH(CH₂CH₃)₂;

(2) die Summe von ss und tt 1 ist; und

(3) rr2 0 ist; oder

(B)

(1) R^{4b} bei jedem Vorkommen unabhängig steht für: CH₂F oder insbesondere Cyclopropyl, Chlor, Fluor,

Ethyl, Methyl, CF_3 , CHF_2 , CH_2CF_3 , CF_2CF_3 , OH, $\text{OCH}(\text{CH}_3)_2$, OCH_3 , OCH_2CH_3 , OCH_2F , OCHF_2 , OCH_2CH_3 , OCH_2CF_3 , OCH_3 , OCF_3 , $(\text{CH}_2)_3\text{OH}$, CH_2OH oder CH_2OCH_3 ;
 (2) ss und tt beide 1 sind; und
 (3) rr2 0 ist.

5. Eine Verbindung nach einem der Ansprüche 1 bis 4, wobei die Verbindung der Formel Iy aus der Liste ausgewählt ist, die Folgendes enthält:

(1xiii) 6-(2-Chlorpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (lxxvi) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (lxxix) 6-(2-Methoxy-6-(Trifluormethyl)pyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (lxxxvi) 6-(2-Methoxypyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (xcvi) 6-(2,6-Dimethoxypyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (xcvii) 6-(2,6-Dimethylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (xcviii) 5-Phenyl-6-(2-(Trifluormethyl)Pyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (xcix) 6-(2-Cyclopropylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (cii) 6-(2-Dichlorpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (cix) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(3-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (cxiii) 6-(2-Chlorpyridin-4-yl)-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (cxiv) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (cxvii) 5-(4-Chlorphenyl)-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (cxviii) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(4-Chlorphenyl)-1,2,4-Triazin-3-Amin;
 (cxix) 5-(4-Chlorphenyl)-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (cxxii) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(3-Chlorphenyl)-1,2,4-Triazin-3-Amin;
 (cxxiv) 4-(3-Amino-6-(2-Chlor-6-Methylpyridin-4-yl)-1,2,4-Triazin-5-yl)Benzonitril;
 (cxxvi) 5-(3-Chlor-5-Fluorphenyl)-6-(2-Chlor-6-Methylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (cxxix) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(3,5-Difluorphenyl)-1,2,4-Triazin-3-Amin;
 (cxxxii) 5-(3-Chlor-4-Fluorphenyl)-6-(2-Chlor-6-Methylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (cxxxiii) 5-(3-Chlor-4-Fluorphenyl)-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (cxxxvi) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(3,4-Difluorphenyl)-1,2,4-Triazin-3-Amin;
 (cxxxvii) 6-(2-Chlorpyridin-4-yl)-5-(3,4-Difluorphenyl)-1,2,4-Triazin-3-Amin;
 (cxi) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(4-(Methoxymethyl)Phenyl)-1,2,4-Triazin-3-Amin;
 (cxli) 6-(2,6-Dimethylpyridin-4-yl)-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (clvii) 4-(3-Amino-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-5-yl)Benzonitril;
 (clix) 6-(2-Chlorpyridin-4-yl)-5-(4-(Methoxymethyl)Phenyl)-1,2,4-Triazin-3-Amin;
 (ccviii) 5-(3-Chlor-5-Fluorphenyl)-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccix) 6-(2-Chlorpyridin-4-yl)-5-(3,5-Difluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccxi) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(4-(Difluormethoxy)phenyl)-1,2,4-Triazin-3-Amin;
 (ccxii) 6-(2-Chlorpyridin-4-yl)-5-(4-(Difluormethoxy)phenyl)-1,2,4-Triazin-3-Amin;
 (ccxvii) 5-(3-Chlor-5-Fluorphenyl)-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccxviii) 5-(3,5-Difluorphenyl)-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccxix) 5-(3,4-Difluorphenyl)-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccxx) 5-(3-Chlor-4-Fluorphenyl)-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccxxi) 5-(4-(Difluormethoxy)phenyl)-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccxxii) 6-(2,6-Dimethylpyridin-4-yl)-5-(3-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccxxiii) 5-(4-Chlorphenyl)-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccxxiv) 4-(3-Amino-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-5-yl)Benzonitril;
 (ccxxv) 5-(3-Chlorphenyl)-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccxxvi) 6-(2,6-Dimethylpyridin-4-yl)-5-(4-(Methoxymethyl)phenyl)-1,2,4-Triazin-3-Amin;
 (ccxxxix) 5-(3-Fluorphenyl)-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccxli) 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-(3,4-Difluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccxlii) 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-(3,5-Difluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccxliii) 6-[2-(Ethylamino)-6-Methylpyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccxliv) 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-(3-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccxlv) 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccxlii) 6-[2-[Ethyl(methyl)amino]-6-Methylpyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccxlvii) 6-[2-(Dimethylamino)-6-Methylpyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccxlviii) 1-[6-(2,6-d6-Dimethylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin];

(ccxlix) 6-[2-d3-Methyl-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccl) 5-(4-Fluorphenyl)-6-[2-d3-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 (ccli) 6-(2,6-Dimethylpyridin-4-yl)-5-(2-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (cclii) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(2-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 5 (ccliii) 6-(2,6-Dimethylpyridin-4-yl)-5-(4-Methoxyphenyl)-1,2,4-Triazin-3-Amin;
 (ccliv) 6-(2-chlorC"6-Methylpyridin-4-yl)-5-(4-Methoxyphenyl)-1,2,4-Triazin-3-Amin;
 (cclv) 6-[2-(Difluormethyl)-6-Methylpyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccarvi) 6-[2-Chlor-6-(Difluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccarvi) 6-[2-Chlor-6-(Fluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 10 (cclviii) 6-[2-(Difluormethyl)-6-Methylpyridin-4-yl]-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (cclix) 6-[2,6-bis(Fiuoromethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclx) 6-[2-(Fluormethyl)-6-Methylpyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclxi) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(2,5-Difluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccclxii) 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-(2-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 15 (ccclxiii) 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-(2,5-Difluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccclxiv) 6-[2-Cyclopropyl-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclxv) 6-[2-Ethyl-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclxvi) 6-(2-Cyclopropyl-6-Methylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclxvii) 6-[2-Fluorphenyl)-6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 20 (ccclxviii) 5-(3-Fluorphenyl)-6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 (ccclxix) 5-(4-Fluorphenyl)-6-[2-Triethyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 (ccclxx) 5-(2,5-Difluorphenyl)-6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 (ccclxxi) 5-(3,4-Difluorphenyl)-6-[2-Methyl-6-(Trifluorornethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 (ccclxxii) 5-(3,5-Difluorphenyl)-6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 25 (ccclxxiii) 6-[2-(Azetidin-1-yl)-6-(Trifluormethyl)pyridin-4-yl]-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccclxxiv) 6-[2-Methyl-6-(morpholin-4-yl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclxxv) 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(4-Ethylphenyl)-1,2,4-Triazin-3-Amin;
 (ccclxxvi) 5-(2,5-Difluorphenyl)-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 (ccclxxvii) 6-(2,6-Dimethylpyridin-4-yl)-5-(4-Methylphenyl)-1,2,4-Triazin-3-Amin;
 30 (ccclxxviii) 6-[2-(Difluormethyl)-6-Methylpyridin-4-yl]-5-(3-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccclxxix) 6-[2-(Difluormethyl)-6-Methylpyridin-4-yl]-5-(2-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 (ccclxxxii) 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclxxxiii) 6-[2,6-bis(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclxxxv) 6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 35 (ccclxxxvii) 6-[2-(Dimethylamino)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclxxxviii) 6-(2-Brom-6-Methylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccclxxxix) 6-(2,6-Dimethyl-1-Oxidopyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccxc) 4-(3-Amino-5-Phenyl-1,2,4-Triazin-6-yl)-6-Methylpyridin-2-Carbonitril;
 (ccxcv) 6-[2-Brom-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 40 (ccc) 6-(2-Methyl-6-d3-Methylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 (cccii) 6-[2-(Azetidin-1-yl)-6-Methylpyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 (ccciii) 6-[2-(Azetidin-1-yl)-6-Methylpyridin-4-yl]-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin; und
 (ccciv) 6-[2-(Azetidin-1-yl)-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin.

45 6. Eine Verbindung gemäß einem der Ansprüche 1 bis 5, wobei die Verbindung der Formel I ausgewählt ist aus:

6-(2-Chloropyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-(2-Chloro-6-Methylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-(2-Methoxypyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 50 6-(2,6-Dimethylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 5-Phenyl-6-(2-(Trifluoromethyl)Pyridin-4-yl)-1,2,4-Triazin-3-Amin;
 6-(2-Cyclopropylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-(2,6-Dichloropyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(3-Fluorophenyl)-1,2,4-Triazin-3-Amin;
 55 5-(4-Chlorphenyl)-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 5-(4-Chlorphenyl)-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 5-(3-Chlor-4-Fluorphenyl)-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 6-(2,6-Dimethylpyridin-4-yl)-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin;

5-(3,5-Difluorphenyl)-6-(2,6-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 6-(2,6-Dimethylpyridin-4-yl)-5-(3-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 5-(4-Chlorphenyl)-6-(2-Dimethylpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 5-(3-Fluorphenyl)-6-(2-Chlorpyridin-4-yl)-1,2,4-Triazin-3-Amin;
 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 6-[2-d3-Methyl-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(3-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-(2-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-(2,5-Difluorphenyl)-1,2,4-Triazin-3-Amin;
 6-(2-Cyclopropyl-6-Methylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin;
 5-(2-Fluorphenyl)-6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 5-(3-Fluorphenyl)-6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 5-(4-Fluorphenyl)-6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 5-(3,5-Difluorphenyl)-6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 6-[2-Chlor-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-[2-Brom-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-[2-(Azetidin-1-yl)-6-Methylpyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-(2-Chlor-6-Methylpyridin-4-yl)-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin;
 5-(4-Fluorphenyl)-6-[2-d3-Methyl-6-(Trifluormethyl)pyridin-4-yl]-1,2,4-Triazin-3-Amin;
 6-[2-(Difluormethyl)-6-Methylpyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-[2-Chlor-6-(Difluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-[2-Chlor-6-(Fluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-[2-(Fluormethyl)-6-Methylpyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin;
 6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin; und
 6-(2-Brom-6-Methylpyridin-4-yl)-5-Phenyl-1,2,4-Triazin-3-Amin.

7. Eine Verbindung, ausgewählt aus der Gruppe bestehend aus:

6-(2-Chlor-6-Methylpyridin-4-yl)-5-(4-Fluorphenyl)-1,2,4-Triazin-3-Amin und
 6-[2-Methyl-6-(Trifluormethyl)pyridin-4-yl]-5-Phenyl-1,2,4-Triazin-3-Amin
 oder ein pharmazeutisch annehmbares Salz oder Solvat davon.

8. Eine Verbindung nach einem der Ansprüche 1 bis 7, wobei:

B für eine Cy^{BB} oder Het^{BB}-Gruppe steht, wobei die Gruppe entweder unsubstituiert oder durcheinem oder mehreren Substituenten aus folgender Auswahl substituiert ist: Fluor, CN, OR⁸ oder C₁₋₆-Alkyl, gegebenenfalls durch einen oder mehrere Substituenten aus folgender Auswahl substituiert: Halogen und OR^{5a}, wobei R^{5a} und R⁸ wie in Anspruch 1 definiert sind
 wobei gegebenenfalls B eine Cy^{BB}- oder Het^{BB}-Gruppe repräsentiert, wobei die Gruppe an der 4. Position relativ zu dem Bindungspunkt an dem Triazinring entweder unsubstituiert oder durch Fluor substituiert ist.

9. Eine Verbindung der Formel Iy_d gemäß einem der Ansprüche 1 bis 7 zur Verwendung bei der Behandlung eines Zustands oder einer Störung, die durch die Hemmung des A₁-Rezeptors oder des A_{2a} verbessert wird, wobei der Zustand oder die Störung ausgewählt ist aus: Herzversagen; Nierenversagen; Ödem; Krebs; Diabetes; Durchfall; Makuladegeneration; Depression; kognitive Funktionsstörungen; eine neurodegenerative Erkrankung; aufmerksamkeitsbezogene Störung; extrapyramidales Syndrom; eine anormalen Bewegungstörung; Zirrhose; Leberfibrose; Fettleber; dermale Fibrose; Schlafstörungen; Schlaganfall; Hirnverletzung oder Nervenentzündung; und Suchtverhalten.

10. Die Verwendung einer Verbindung der Formel Iy_d gemäß einem der Ansprüche 1 bis 7 zur Herstellung eines Arzneimittels zur Behandlung eines Zustands oder einer Störung, die durch die Hemmung des A_i-Rezeptors oder des A_{2a} verbessert wird, wobei der Zustand oder die Störung ausgewählt ist aus: Herzversagen; Nierenversagen; Ödem; Krebs; Diabetes; Durchfall; Makuladegeneration; Depression; kognitive Funktionsstörungen; eine neurodegenerative Erkrankung; aufmerksamkeitsbezogene Störung; extrapyramidales Syndrom; eine anormalen Bewegungstörung; Zirrhose; Leberfibrose; Fettleber; dermale Fibrose; Schlafstörungen; Schlaganfall; Hirnverletzung oder Nervenentzündung; und Suchtverhalten.

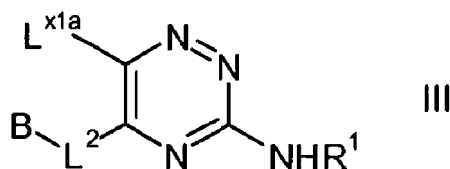
11. Verwendung nach Anspruch 10 oder Verbindung zur Verwendung nach Anspruch 9 beansprucht, wobei der Zustand

oder die Störung, die durch die Hemmung der A_{2a}-Rezeptors verbessert wird und ausgewählt ist aus: Depression; kognitive Funktionsstörungen; eine neurodegenerative Erkrankung; aufmerksamkeitsbezogene Störung; extrapyramidales Syndrom; eine anormalen Bewegungstörung; Zirrhose; Leberfibrose; Fettleber; dermale Fibrose; Schlafstörungen; Schlaganfall; Hirnverletzung oder Nervenentzündung; und Suchtverhalten.

12. Verwendung gemäß Anspruch 10 oder Anspruch 11, oder Verbindung zur Verwendung gemäß Anspruch 9 oder Anspruch 11, wobei der Zustand oder die Störung Migräne ist.
13. Verwendung gemäß Anspruch 10 oder Anspruch 11, oder Verbindung zur Verwendung gemäß Anspruch 9 oder Anspruch 11, wobei die neurodegenerative Erkrankung die Parkinson-Krankheit, Huntington-Krankheit, Alzheimer-Krankheit oder amyotrophe Lateralsklerose ist.
14. Verwendung oder Verbindung zur Verwendung gemäß Anspruch 13, wobei der Zustand oder die Störung, die durch die Hemmung des A_{2a}-Rezeptors verbessert wird, die Parkinson-Krankheit ist.
15. Verwendung gemäß Anspruch 10 oder Anspruch 11, oder Verbindung zur Verwendung gemäß Anspruch 9 oder Anspruch 11, wobei der Zustand oder die Störung, die durch die Hemmung des A_{2a}-Rezeptors verbessert wird, Suchtverhalten oder ADHS ist.
16. Verbindung zur Verwendung gemäß Anspruch 9 oder Anspruch 11 oder Verwendung gemäß Anspruch 10 oder Anspruch 11, wobei der Zustand oder die Störung, die durch die Hemmung des A_i-Rezeptors verbessert wird, eine Nierenschädigung aufgrund akuten Nierenversagens, Ödeme, Herzinsuffizienz, chronische Nierenerkrankung und/oder Leberzirrhose sind.
17. Eine Verbindung der Formel Iy nach einem der Ansprüche 1 bis 7 zur Verwendung als bei Nierenschädigung aufgrund akuten Nierenversagens, Ödeme, Herzinsuffizienz, chronische Nierenerkrankung und/oder Leberzirrhose
18. Verwendung der Verbindung der Formel Iy gemäß einem der Ansprüche 1 bis 7 für die Herstellung eines Medikaments gegen Nierenschäden durch akutes Nierenversagen, Ödeme, Herzinsuffizienz, chronische Nierenerkrankung und/oder Leberzirrhose.
19. Eine Verbindung der Formel Iy gemäß einem der Ansprüche 1 bis 7 zur Verwendung in der Medizin.
20. Eine pharmazeutische Formulierung, die eine Verbindung der Formel Iy gemäß einem der Ansprüche 1 bis 7 im Gemisch mit einem pharmazeutisch[^] annehmbaren Hilfsstoff, Verdünnungsmittel oder Träger umfasst.
21. Ein Verfahren zur Herstellung einer Verbindung der Formel Iy gemäß einem der Ansprüche 1 bis 7, wobei das Verfahren umfasst:

(i)

(a) Reaktion einer Verbindung der Formel III,



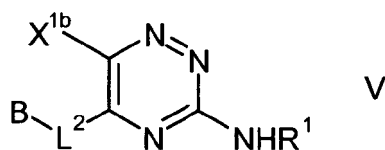
wobei L^{x1a} für ein Metallhalogenid, -Sn(R^{x1})₃ für ein alkyl-cyclotriboroxanes Derivat, -B(OH)₂, -B(OR^{x1})₂ oder ein Organosilan steht, wobei jedes hier erwähnte R^{x1} unabhängig eine C₁₋₆-Alkyl-Gruppe repräsentiert, oder, im Falle von -B(OR^{x1})₂, die zwei R^{x1}-Gruppen verbunden sind, um eine 4- bis 6-gliedrige cyclische Gruppe zu bilden, L² für eine direkte Bindung steht, R¹ für H steht, und B wie in Anspruch 1 definiert ist, mit einer Verbindung der Formel IV,

A-X^{1a}

IV

wobei X^{1a} für eine geeignete Abgangsgruppe steht und A die erforderliche substituierte Pyridin-4-yl-Gruppe, wie in Anspruch 1 definiert, repräsentiert;

(b) Reaktion einer Verbindung der Formel V,



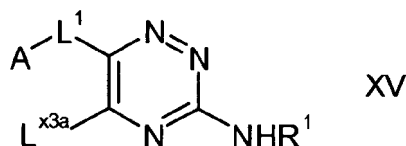
wobei X^{1b} für eine geeignete Abgangsgruppe, L^2 für eine direkte Bindung, R^1 für H steht und B wie in Anspruch 1 definiert ist, mit einer Verbindung der Formel VI,



wobei L^{x1b} für ein Metallhalogenid steht, $-\text{Sn}(\text{R}^{x1})_3$ für ein Alkyl-cyclotriboroxane Derivat, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$ oder ein Organosilan, wobei jedes R^{x1} wie oben definiert ist, und A für die erforderliche substituierte Pyridin-4-yl-Gruppe wie in Anspruch 1 definiert steht;

(ii)

(a) Reaktion einer Verbindung der Formel XV,

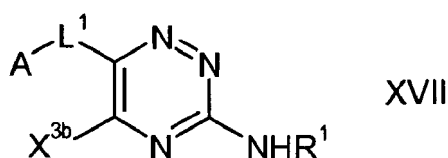


wobei L^{x3a} für ein Metallhalogenid, $-\text{Sn}(\text{R}^{x1})_3$ für ein alkyl-cyclotriboroxanes Derivat, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$ oder ein Organosilan steht, in dem jedes R^{x1} wie oben definiert ist, L^1 für eine direkte Bindung, R^1 für H steht und A für die erforderliche substituierte Pyridin-4-yl-Gruppe gemäß Anspruch 1 steht, mit einer Verbindung der Formel XVI,



hierin steht X^{3a} für eine geeignete Abgangsgruppe und B ist wie in Anspruch 1;

(b) Reaktion einer Verbindung der Formel XVII,

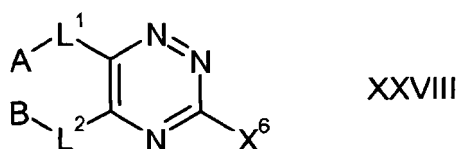


wobei X^{3b} für eine geeignete Abgangsgruppe, L^1 für eine direkte Bindung, R^1 für H steht, und A für die erforderliche substituierte Pyridin-4-yl-Gruppe gemäß Anspruch 1 steht, mit einer Verbindung der Formel XVIII,



XVIII, wobei L^{x3b} für ein Metallhalogenid, $-\text{Sn}(\text{R}^{x1})_3$ für ein alkyl-cyclotriboroxanes Derivat, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$ oder ein Organosilan steht, in dem jedes R^{x1} wie oben definiert ist, und B wie in Anspruch 1 definiert ist;

(iii) Reaktion einer Verbindung der Formel XXVIII,

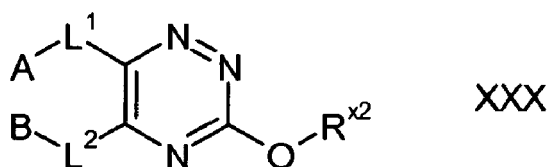


wobei X^6 für eine solche geeignete Abgangsgruppe steht, L^1 und L^2 direkte Bindungen darstellen, A für die erforderliche substituierte Pyridin-4-yl-Gruppe gemäß Anspruch 1 steht, und B wie in Anspruch 1 definiert ist, mit einer Verbindung der Formel XXIX,



wobei R^1 H ist;

(iv) Reaktion einer Verbindung der Formel XXX,



wobei R^{x2} für eine geeignete Abgangsgruppe steht, L^1 und L^2 für direkte Bindungen stehen, A für die erforderliche substituierte Pyridin-4-yl-Gruppe gemäß Anspruch 1 steht und B wie in Anspruch 1 definiert ist, oder ein geschütztes Derivat davon mit einer Verbindung der Formel XXIX, wobei R^1 H ist;

(v) Reaktion einer Verbindung der Formel XXXI,

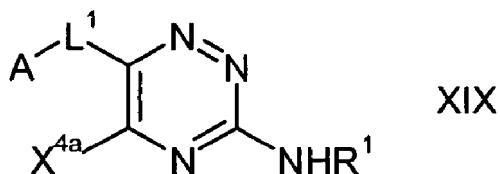


wobei A die erforderliche substituierte Pyridin-4-yl Gruppe gemäß der Definition in Anspruch 1 repräsentiert ist und B wie in Anspruch 1 definiert, mit einer Verbindung der Formel XXXII,



wobei R^1 H ist;

(vii) für Verbindungen der Formel lyd, in denen B für eine stickstoffhaltige Het^{BB}-Gruppe steht, die über ein Stickstoffatom innerhalb des Ringsystems verbunden ist, Reaktion einer Verbindung der Formel XIX,



wobei X^{4a} für eine geeignete Abgangsgruppe steht, L^1 für eine direkte Bindung steht, R^1 für H steht, und A für die erforderliche substituierte Pyridin-4-yl-Gruppe gemäß Anspruch 1 steht, mit einer Verbindung der Formel XXXIV,

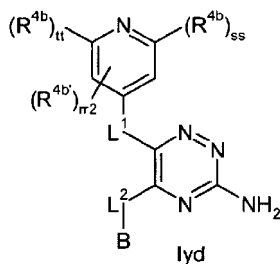


worin Het^{B1} genauso wie Het^{BB} gemäß obiger Definition definiert ist, außer daß Het^{B1} ein stickstoffhaltiger Heterozyklus ist, der über ein Stickstoffatom in dem Heterozyklus an das H-Atom gekoppelt ist, das für die Verbindung der Formel XXXIV dargestellt wird; und

(ix) für Verbindungen der Formel Iy, in denen eines der R^{4b'}, R^{4b}, R^{4c} und R^{4d} -OH repräsentieren, Reaktion einer Verbindung der Formel Iy, in der eine der R^{4b'}, R^{4b}, R^{4c} und R^{4d} für -OR^{4y} steht, wobei R^{4y} für ein C₁₋₆-Alkyl, C₂₋₆-Alkenyl, C₂₋₆-Alkynyl oder C₃₋₆-Cycloalkyl steht, wobei diese Gruppen mit einem Dealkylierungsmittel durch einen oder mehrere der Substituenten Halogen, C₁₋₄-Alkyl und Aryl substituiert sein können.

Revendications

1. Un composé de formule Iy,



dans laquelle,

B représente un Cy^{BB} ou un Het^{BB} ;

Cy^{BB} représente un phényle éventuellement substitué par un ou plusieurs substituants R^{4c} ;

Het^{BB} représente un groupe hétérocyclique aromatique de 6 éléments qui contient un ou plusieurs atomes d'azote et dont le groupe Het^{BB} est éventuellement substitué par un ou plusieurs substituants R^{4d} ;

R^{4b}, R^{4b'}, R^{4c} et R^{4d} représentent, indépendamment à chaque occurrence,

(a) halo,

(b) CN,

(c) alkyle en C₁₋₂, alcényle en C₂₋₁₂, alcynyle en C₂₋₁₂, dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, alkyle en C₁₋₆, alcényle en C₂₋₆, alcynyle en C₂₋₆ (dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de OH, =O, halo, alkyle en C₁₋₄ et alkoxy en C₁₋₄), OR^{5a}, S(O)_qR^{5b}, S(O)₂N(R^{5c})(R^{5d}), N(R^{5e})S(O)₂R^{5f}, N(R^{5g})(R^{5h}), B¹-C(G¹)-B²-R⁵ⁱ, aryle et Het¹,

(d) Cy³, dont le groupe Cy³ est éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, alkyle en C₁₋₆, alcényle en C₂₋₆, alcynyle en C₂₋₆ (dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir d'OH, =O, halo, alkyle en C₁₋₄ et alkoxy en C₁₋₄), OR^{6a}, S(O)_qR^{6b}, S(O)₂N(R^{6c})(R^{6d}), N(R^{6e})S(O)₂R^{6f}, N(R^{6g})(R^{6h}), B³-C(G¹)-B⁴-R⁶ⁱ, aryle et Het²,

(e) Het^a, dont le groupe Het^a est éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, alkyle en C₁₋₆, alcényle en C₂₋₆, alcynyle en C₂₋₆ (dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir d'OH, =O, halo, alkyle en C₁₋₄ et alkoxy en C₁₋₄), OR^{7a}, S(O)_qR^{7b}, S(O)₂N(R^{7c})(R^{7d}), N(R^{7e})S(O)₂R^{7f}, N(R^{7g})(R^{7h}), B⁵-C(G¹)-B⁶-R⁷ⁱ, aryle et Het³,

(f) OR⁸,

(g) S(O)_rR^{9a},

(h) S(O)₂N(R^{9b})(R^{9c}),

(i) N(R^{9d})S(O)₂R^{9e},

(j) N(R^{9f})(R^{9g}),

(k) B¹-C(G¹)-B⁸-R^{9h},

(l) =O,

(m) =S,

rr2 représente 0 à 2 ;

ss et tt représentent, indépendamment à chaque occurrence, 0 ou 1, à condition que ss et tt ne représentent pas à la fois 0 ;

L¹ et L² représentent à la fois des liaisons directes ;

G¹ représente, indépendamment à chaque occurrence, O, S ou NR^{5j} ;

R⁸ représente, indépendamment à chaque occurrence,

H,

Cy³ Het^a, aryle^a, alkyle en C₁₋₈, alcényle en C₂₋₈, alcynyle en C₂₋₈, cycloalkyle en C₃₋₈, dont les sept derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, -CN, cycloalkyle en C₃₋₆, aryle, Het⁴, -C(O)OR¹⁰, -C(O)R¹¹, -C(O)N(R^{N1})(R^{N2}), S(O)_rR^{9aa}, S(O)₂N(R^{9ba})(R^{9ca}), N(R^{9da})S(O)₂R^{9ea} et N(R^{9fa})(R^{9ga}) ;

Cy³ représente, indépendamment à chaque occurrence, un noyau hétérocyclique de 3 à 6 éléments aromatiques, complètement saturés ou partiellement non saturés ;

Het^a représente, indépendamment à chaque occurrence, un noyau hétérocyclique de 3 à 6 éléments pouvant être aromatiques, complètement saturés ou partiellement non saturés et qui contient un ou plusieurs hétéroatomes sélectionnés à partir de O, S et N ;

R¹⁰ et R¹¹ représentent indépendamment

(a) H,

(b) alkyle en C₁₋₆ éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de halo, aryle, -N(R^{N3})(R^{N4}) et -OR^a,

(c) aryle ou

(d) cycloalkyle en C₃₋₇ (dont le groupe est éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de OH, =O, halo, alkyle en C₁₋₄ et alkoxy en C₁₋₄) ;

B¹ à B⁸ représentent, indépendamment à chaque occurrence, une liaison directe, O, S ou N(R^{N3}) ; chaque aryle³ représente indépendamment un groupe aromatique carbocyclique en C₆₋₁₄, dont le groupe aromatique peut comporter un, deux ou trois noyaux ;

chaque aryle représente indépendamment un groupe aromatique carbocyclique en C₆₋₁₄, dont le groupe aromatique peut comporter un, deux ou trois noyaux et peut être remplacé par un ou plusieurs substituants sélectionnés à partir de

halo,

alkyle en C₁₋₆, dont le dernier groupe est éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de halo, -N(R^{N4})(R^{N5}) et -OR^a et

-OR^a ;

Het¹ à Het⁴ représentent indépendamment des groupes hétérocycliques de 4 à 14 éléments contenant un ou plusieurs hétéroatomes sélectionnés à partir de O, S et N, dont les groupes hétérocycliques peuvent comporter deux ou trois noyaux et peuvent être remplacés par un ou plusieurs substituants sélectionnés à partir de

halo,

alkyle en C₁₋₆, dont le dernier groupe est éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de halo, -N(R^{N6})(R^{N7}) et -OR^a et

-OR^a ;

R^{N1} et R^{N7} représentent indépendamment

H,

alkyle en C₁₋₆ ou cycloalkyle en C₃₋₆, dont les deux derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo et -OR^a ;

R^a représente, indépendamment à chaque occurrence,

(a) H ;

(b) alkyle en C₁₋₁₂, alcényle en C₂₋₁₂, alcynyle en C₂₋₁₂, cycloalkyle en C₃₋₁₂, cycloalcényle en C₄₋₁₂ dont les cinq derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, alkyle en C₁₋₆, alcényle en C₂₋₆, alcynyle en C₂₋₆, cycloalkyle en C₃₋₈ (dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de OH, =O, halo, alkyle en C₁₋₄ et alkoxy en C₁₋₄), OR^{12a}, S(O)_qR^{12b}, S(O)₂(R^{12c})(R^{12d}), N(R^{12e})S(O)₂R^{12f}, N(R^{12g})(R^{12h}), B⁹-C(G²)-B¹⁰-R¹²ⁱ, aryle¹ et Het^b et dont les groupes cycloalkyles C₃₋₁₂ ou C₄₋₁₂ peuvent être éventuellement substitués par =O,

(c) S(O)_rR^{13a},

(d) S(O)₂N(R^{13b})(R^{13c}) ou

(e) C(O)-B¹¹-R^{13d} ;

R^{5a} R^{5j}, R^{6a} à R⁶ⁱ, R^{7a} à R⁷ⁱ R^{9a} à R^{9h} R^{9aa} à R^{9ga}, R^{12a} à R¹²ⁱ et R^{13a} à R^{13d} représentent, indépendamment

à chaque occurrence,

(a) H,

(b) alkyle en C₁₋₁₀, alcényle en C₂₋₁₀, alcynyle en C₂₋₁₀, dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, alkyle en C₁₋₆, alcényle en C₂₋₆, alcynyle en C₂₋₆, cycloalkyle en C₃₋₆ (dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir d'OH, =O, halo, alkyle en C₁₋₄ et alkoxy en C₁₋₄), OR^{5aa}, S(O)_qR^{5ab}, S(O)₂N(R^{5ac})(R^{5ad}), N(R^{5ae})S(O)₂R^{5af}, N(R^{5ag})(R^{5ah}), B¹²-C(G²)-B¹³-R^{5ai}, aryle¹ et Het^c,

(c) cycloalkyle en C₃₋₁₀ ou cycloalcényle en C₄₋₁₀, (dont les deux derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, OH, =O, alkyle en C₁₋₆ et alkoxy en C₁₋₆) ;

(d) Het^d ;

G² représente, indépendamment à chaque occurrence, O, S ou NR^{5aj} ;

R^{5aa} et R^{5aj} représentent, indépendamment à chaque occurrence,

(a) H,

(b) alkyle en C₁₋₄, alcényle en C₂₋₄, alcynyle en C₂₋₄, dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, alkyle en C₁₋₄, alcényle en C₂₋₄, alcynyle en C₂₋₄ (dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir d'OH, =O, halo, alkyle en C₁₋₄ et alkoxy en C₁₋₄) ;

(c) cycloalkyle en C₃₋₆ ou cycloalcényle en C₄₋₆, (dont les deux derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, OH, =O, alkyle en C₁₋₄ et alkoxy en C₁₋₄) ;

(d) Het^e,

ou R^{5ag} et R^{5ah} peuvent représenter, conjointement avec l'atome d'azote auquel ils sont attachés, un noyau hétérocyclique de 3 à 10 éléments pouvant être aromatiques, complètement saturés ou partiellement non saturés qui peuvent en outre contenir un ou plusieurs hétéroatomes sélectionnés à partir de O, S et N, dont le noyau hétérocyclique est éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, alkyle en C₁₋₆, alcényle en C₂₋₆, alcynyle en C₂₋₆ (dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de OH, =O, Halo, alkyle en C₁₋₄ et alkoxy en C₁₋₄) ;

B⁹ à B¹³ représentent indépendamment une liaison directe, O, S ou N(R^{N8}) ;

aryle¹ représente, indépendamment à chaque occurrence, un groupe carbocyclique aromatique en C₆₋₁₀, dont le groupe aromatique peut comporter un ou deux noyaux et peut être remplacé par un ou plusieurs substituants sélectionnés à partir de

halo,

alkyle en C₁₋₆, dont le dernier groupe est éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de halo, -N(R^{N10})(R^{N11}) et alkoxy en C₁₋₆ (dont le dernier substituant est éventuellement substitué par un ou plusieurs atomes halo) et

alkoxy en C₁₋₆ (dont le dernier groupe est éventuellement substitué par un ou plusieurs atomes halo) ;

R^{N8}, R^{N10} et R^{N11} représentent indépendamment

H,

alkyle en C₁₋₆ ou cycloalkyle en C₃₋₆, dont les deux derniers groupes sont éventuellement substitués par un ou plusieurs atomes halo ;

Het^b représente un noyau de 5 ou 6 éléments pouvant être aromatiques, complètement saturés ou partiellement non saturés et qui contient un ou plusieurs hétéroatomes sélectionnés à partir de O, S et N, dont le groupe hétérocyclique peut être substitué par un ou plusieurs substituants sélectionnés à partir de halo, =O et alkyle en C₁₋₆ ;

Het^a à Het^e représentent indépendamment un noyau hétérocyclique de 3 à 6 éléments pouvant être aromatiques, complètement saturés ou partiellement non saturés et qui contient un ou plusieurs hétéroatomes sélectionnés à partir de O, S et N, dont les groupes Het^c à Het^e sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, alkyle en C₁₋₆, alcényle en C₂₋₆, alcynyle en C₂₋₆ (dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir d'OH, =O, halo, alkyle en C₁₋₄ et alkoxy en C₁₋₄) ;

q et r représentent indépendamment à chaque occurrence 0, 1 ou 2 ; et

sauf indication contraire, alkyle, alcényle, alcynyle, cycloalkyle et la partie alkyle des groupes alkoxy peuvent être substitués par un ou plusieurs atomes halo ;
ou un sel ou un solvate pharmaceutiquement acceptable de ceux-ci.

- 5 2. Un composé, suivant la revendication dans la revendication 1, dans laquelle R^{4b} et $R^{4b'}$ représentent, indépendamment à chaque occurrence

(a) halo,

(b) CN,

10 (c) alkyle en C_{1-4} , alcényle en C_{2-4} , alcynyle en C_{2-4} , dont les trois derniers groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, OR^{5a} , $S(O)_qR^{5b}$, $S(O)_2N(R^{5c})(R^{5d})$, $N(R^{5e})S(OR^{5f}, N(R^{5g})(R^{5h}), B^1-C(G^1)-B^2-R^{5i}$ et Het^1 (p. ex., un ou plusieurs substituants sélectionnés à partir de nitro, CN, OR^{5a} , $S(O)_qR^{5b}$, $S(O)_2N(R^{5c})(R^{5d})$, $N(R^{5e})S(O)_2R^{5f}$, $N(R^{5g})(R^{5h}), B^1-C(G^1)-B^2-R^{5i}$ et Het^1),

15 (d) Cy^3 , dont le groupe Cy^3 est éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de nitro, CN, OR^{6a} , $S(O)_qR^{6b}$, $S(O)_2N(R^{6c})(R^{6d})$, $N(R^{6e})S(O)_2R^{6f}$, $N(R^{6g})(R^{6h}), B^3-C(G^1)-B^4-R^{6i}$ et Het^2 ,

(e) Het^a , dont le groupe Het^a est éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de halo, nitro, CN, OR^{7a} , $S(O)_qR^{7b}$, $S(O)_2N(R^{7c})(R^{7d})$, $N(R^{7e})S(O)_2R^{7f}$, $N(R^{7g})(R^{7h}), B^5-C(G^1)-B^6-R^{7i}$ et Het^3 ,
(f) OR^8 ,

20 (g) $S(O)_rR^{9a}$,

(h) $S(O)_2N(R^{9b})(R^{9c})$,

(i) $N(R^{9d})S(O)_2R^{9e}$,

(j) $N(R^{9f})(R^{9g})$ ou

(k) $B^7-C(G^1)-B^8-R^{9h}$,

25 dans laquelle R^{5a} à R^{5i} , R^{6a} à R^{6i} , R^{7a} à R^{7i} , R^8 , R^{9a} à R^{9h} , Cy^3 , Het^1 à Het^3 , Het^a , B^1 à B^8 , G^1 , q et r , suivant la définition dans la revendication 1.

3. Un composé, suivant la revendication dans la revendication 1 ou la revendication 2, dans laquelle :

30 $R^{4b'}$ et R^{4b} représentent, indépendamment à chaque occurrence, cyclopropyle, iodo, bromo, chloro, fluoro, éthyle, méthyle, d3-méthyle, isopropyle, $-C=CH$, phényle, CF_3 , CHF_2 , CH_2F , CH_2CF_3 , CF_2CF_3 , CN, $=O$, OH, $OCH(CH_3)_2$, OCH_3 , OCH_2CH_3 , OCH_2F , $OCHF_2$, OCH_2CF_3 , OCF_3 , $(CH_2)_3OH$, CH_2OH ou CH_2OCH_3 , $CH(CH_3)OH$, $C(CH_3)_3OH$, CH_2CH_2OH ,
35 NH_2 , $N(CH_3)_2$, $N(H)CH_2CH_3$, $N(H)C(O)CH_3$, $C(O)CH_3$, $C(O)N(CH_3)_2$, $S(O)_2CH_3$, $S(O)CH_3$, SCH_3 , $S(O)CF_3$, azétidine, morpholine ou dioxolane.

4. Un composé, suivant la revendication dans une quelconque des revendications 1 à 3, dans laquelle :

(A)

40 (1) R^{4b} représente, indépendamment à chaque occurrence, OH, $OCH(CH_3)_2$, OCH_3 , OCH_2CH_3 , OCH_2F , $OCHF_2$, OCH_2CH_3 , OCH_2CF_3 , OCH_3 , OCF_3 , $(CH_2)_3OH$, CH_2OH or CH_2OCH_3 , NH_2 , $NHCH(CH_3)_2$, $NHCH_3$, $NHCH_2CH_3$, $NHCH_2CH_3$, $NH(CH(CH_3)_2)_2$, $NH(CH_3)_2$, $NH(CH_2CH_3)_2$ ou $NH(CH_2CH_3)_2$;

(2) la somme des ss et tt est 1 ; et

45 (3) rr2 est 0 ; ou

(B)

50 (1) R^{4b} représente, indépendamment à chaque occurrence, CH_2F ou, particulièrement, cyclopropyl, chloro, fluoro, éthyle, méthyle, CF_3 , CHF_2 , CH_2CF_3 , CF_2CF_3 , OH, $OCH(CH_3)_2$, OCH_3 , OCH_2CH_3 , OCH_2F , $OCHF_2$, OCH_2CH_3 , OCH_2CF_3 , OCH_3 , OCF_3 , $(CH_2)_3OH$, CH_2OH ou CH_2OCH_3 ;

(2) ss et tt sont à la fois 1 ; et

(3) rr2 est 0.

- 55 5. Un composé, suivant la revendication dans une quelconque des revendications de 1 à 4, dans laquelle le composé de formule Iy est sélectionné dans la liste comprenant :

(Ixi) 6-(2-chloropyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;

- (lxxvi) 6-(2-chloro-6-méthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 (lxxix) 6-(2-méthoxy-6-(trifluorométhyl)pyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 (lxxxvi) 6-(2-méthoxypyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 5 (xcvi) 6-(2,6-diméthoxypyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 (xcvii) 6-(2,6-diméthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 (xcviii) 5-phényl-6-(2-(trifluorométhyl)pyridin-4-yl)-1,2,4-triazin-3-amine ;
 (xcix) 6-(2-cyclopropylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 (cii) 6-(2,6-dichloropyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 (cix) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(3-fluorophényl)-1,2,4-triazin-3-amine ;
 10 (cxiii) 6-(2-chloropyridin-4-yl)-5-(4-fluorophényl)-1,2,4-triazin-3-amine ;
 (cxiv) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(4-fluorophényl)-1,2,4-triazin-3-amine ;
 (cxvii) 5-(4-chlorophényl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine ;
 (cxviii) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(4-chlorophényl)-1,2,4-triazin-3-amine ;
 (lxxix) 5-(3-méthoxy-6-(trifluorométhyl)pyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 15 (cxxii) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(3-chlorophényl)-1,2,4-triazin-3-amine ;
 (cxxiv) 4-(3-amino-6-(2-chloro-6-méthylpyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile ;
 (cxxvi) 5-(3-chloro-5-fluorophényl)-6-(2-chloro-6-méthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
 (cxxxix) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(3,5-difluorophényl)-1,2,4-triazin-3-amine ;
 (cxxxii) 5-(3-chloro-4-fluorophényl)-6-(2-chloro-6-méthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
 20 (cxxxiii) 5-(3-chloro-4-fluorophényl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine ;
 (cxxxvii) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(3,4-difluorophényl)-1,2,4-triazin-3-amine ;
 (cxxxviii) 6-(2-chloropyridin-4-yl)-5-(3,4-difluorophényl)-1,2,4-triazin-3-amine ;
 (cxi) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(4-(méthoxyméthyl)phényl)-1,2,4-triazin-3-amine ;
 (cxli) 6-(2,6-diméthylpyridin-4-yl)-5-(4-fluorophényl)-1,2,4-triazin-3-amine ;
 25 (clvii) 4-(3-amino-6-(2-chloropyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile ;
 (clix) 6-(2-chloropyridin-4-yl)-5-(4-(méthoxyméthyl)phényl)-1,2,4-triazin-3-amine ;
 (ccviii) 5-(3-chloro-5-fluorophényl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine ;
 (ccix) 6-(2-chloropyridin-4-yl)-5-(3,5-difluorophényl)-1,2,4-triazin-3-amine ;
 (ccxi) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(4-(difluorométhoxy)phényl)-1,2,4-triazin-3-amine ;
 30 (ccxii) 6-(2-chloropyridin-4-yl)-5-(4-(difluorométhoxy)phényl)-1,2,4-triazin-3-amine ;
 (ccxvii) 5-(3-chloro-5-fluorophényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
 (ccxviii) 5-(3,5-difluorophényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
 (ccxix) 5-(3,4-difluorophényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
 (ccxx) 5-(3-chloro-4-fluorophényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
 35 (ccxxi) 5-(4-(difluorométhoxy)phényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
 (ccxxii) 6-(2,6-diméthylpyridin-4-yl)-5-(3-fluorophényl)-1,2,4-triazin-3-amine ;
 (ccxxiii) 5-(4-chlorophényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
 (ccxxiv) 4-(3-amino-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-5-yl)benzonitrile ;
 (ccxxv) 5-(3-chlorophényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
 40 (ccxxvi) 6-(2,6-diméthylpyridin-4-yl)-5-(4-(méthoxyméthyl)phényl)-1,2,4-triazin-3-amine ;
 (ccxxxix) 5-(3-fluorophényl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine ;
 (ccxli) 6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-(3,4-difluorophényl)-1,2,4-triazin-3-amine ;
 (ccxlii) 6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-(3,5-difluorophényl)-1,2,4-triazin-3-amine ;
 (ccxliii) 6-[2-(éthylamino)-6-méthylpyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 45 (ccxliv) 6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-(3-fluorophényl)-1,2,4-triazin-3-amine ;
 (ccxlv) 6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-(4-fluorophényl)-1,2,4-triazin-3-amine ;
 (ccxlvii) 6-[2-(éthyl(méthyl)amino)-6-méthylpyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 (ccxlviii) 6-[2-(diméthylamino)-6-méthylpyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 (ccxlviii) 1-[6-(2,6-diméthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 50 (ccxlix) 6-[2-d3-méthyl-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 (ccl) 5-(4-fluorophényl)-6-[2-d3-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
 (ccli) 6-(2,6-diméthylpyridin-4-yl)-5-(2-fluorophényl)-1,2,4-triazin-3-amine ;
 (cclii) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(2-fluorophényl)-1,2,4-triazin-3-amine ;
 (ccliii) 6-(2,6-diméthylpyridin-4-yl)-5-(4-méthoxyphényl)-1,2,4-triazin-3-amine ;
 55 (ccliv) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(4-méthoxyphényl)-1,2,4-triazin-3-amine ;
 (cclv) 6-[2-(difluorométhyl)-6-méthylpyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 (ccclvi) 6-[2-chloro-6-(difluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 (ccclvii) 6-[2-chloro-6-(fluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;

(cclviii) 6-[2-(difluorométhyl)-6-méthylpyridin-4-yl]-5-(4-fluorophényl)-1,2,4-triazin-3-amine ;
(cclix) 6-[2,6-bis(fluorométhyl)pyridine-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(cclx) 6-[2-(fluorométhyl)-6-méthylpyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(cclxi) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(2,5-difluorophényl)-1,2,4-triazin-3-amine ;
5 (cclxii) 6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-(2-fluorophényl)-1,2,4-triazin-3-amine ;
(cclxiii) 6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-(2,5-difluorophényl)-1,2,4-triazin-3-amine ;
(cclxiv) 6-[2-cyclopropyl-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(cclxv) 6-[2-éthyl-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(cclxvi) 6-(2-cyclopropyl-6-méthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
10 (cclxvii) 5-(2-fluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
(cclxviii) 5-(3-fluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
(cclxix) 5-(4-fluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
(cclxx) 5-(2,5-difluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
(cclxxi) 5-(3,4-difluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
15 (cclxxii) 5-(3,5-difluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
(cclxxiii) 6-[2-(azétidine-1-yl)-6-(trifluorométhyl)pyridin-4-yl]-5-(4-fluorophényl)-1,2,4-triazin-3-amine ;
(cclxxiv) 6-[2-méthyl-6-(morpholin-4-yl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(cclxxv) 6-(2-chloro-6-méthylpyridin-4-yl)-5-(4-éthylphényl)-1,2,4-triazin-3-amine ;
(cclxxvi) 5-(2,5-difluorophényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
20 (cclxxvii) 6-(2,6-diméthylpyridin-4-yl)-5-(4-méthylphényl)-1,2,4-triazin-3-amine ;
(cclxxviii) 6-[2-(difluorométhyl)-6-méthylpyridin-4-yl]-5-(3-fluorophényl)-1,2,4-triazin-3-amine ;
(cclxxix) 6-[2-(difluorométhyl)-6-méthylpyridin-4-yl]-5-(2-fluorophényl)-1,2,4-triazin-3-amine ;
(cclxxxii) 6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(cclxxxiii) 6-[2,6-bis(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
25 (cclxxxv) 6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(cclxxxvii) 6-[2-(diméthylamino)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(cclxxxviii) 6-(2-bromo-6-méthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
(cclxxxix) 6-(2,6-diméthyl-1-oxidopyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
(ccxc) 4-(3-amino-5-phényl-1,2,4-triazin-6-yl)-6-méthylpyridine-2-carbonitrile ;
30 (ccxcv) 6-[2-bromo-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(ccc) 6-(2-méthyl-6-d3-méthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
(cccii) 6-[2-(azétidine-1-yl)-6-méthylpyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
(ccciii) 6-[2-(azétidine-1-yl)-6-méthylpyridin-4-yl]-5-(4-fluorophényl)-1,2,4-triazin-3-amine ; et
(ccciv) 6-[2-(azétidine-1-yl)-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine.

6. Un composé, suivant la revendication dans une quelconque des revendications de 1 à 5, dans laquelle le composé de formule Iy est sélectionné à partir de :

6-(2-chloropyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
40 6-(2-chloro-6-méthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
6-(2-méthoxy-pyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
6-(2,6-diméthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
5-phényl-6-(2-(trifluorométhyl)pyridin-4-yl)-1,2,4-triazin-3-amine ;
6-(2-cyclopropylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
45 6-(2,6-dichloropyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
6-(2-chloro-6-méthylpyridin-4-yl)-5-(3-fluorophényl)-1,2,4-triazin-3-amine ;
5-(4-chlorophényl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine ;
5-(3-chlorophényl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine ;
5-(3-chloro-4-fluorophényl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine ;
50 6-(2,6-diméthylpyridin-4-yl)-5-(4-fluorophényl)-1,2,4-triazin-3-amine ;
5-(3,5-difluorophényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
6-(2,6-diméthylpyridin-4-yl)-5-(3-fluorophényl)-1,2,4-triazin-3-amine ;
5-(4-chlorophényl)-6-(2,6-diméthylpyridin-4-yl)-1,2,4-triazin-3-amine ;
5-(3-fluorophényl)-6-(2-chloropyridin-4-yl)-1,2,4-triazin-3-amine ;
55 6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-(4-fluorophényl)-1,2,4-triazin-3-amine ;
6-[2-d3-méthyl-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
6-(2-chloro-6-méthylpyridin-4-yl)-5-(2-fluorophényl)-1,2,4-triazin-3-amine ;
6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-(2-fluorophényl)-1,2,4-triazin-3-amine ;

6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-(2,5-difluorophényl)-1,2,4-triazin-3-amine ;
 6-(2-cyclopropyl-6-méthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine ;
 5-(2-fluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
 5-(3-fluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
 5-(4-fluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
 5-(3,5-difluorophényl)-6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
 6-[2-chloro-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 6-[2-bromo-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 6-[2-(azétidine-1-yl)-6-méthylpyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 6-(2-chloro-6-méthylpyridin-4-yl)-5-(4-fluorophényl)-1,2,4-triazin-3-amine ;
 5-(4-fluorophényl)-6-[2-d3-méthyl-6-(trifluorométhyl)pyridin-4-yl]-1,2,4-triazin-3-amine ;
 6-[2-(difluorométhyl)-6-méthylpyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 6-[2-chloro-6-(difluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 6-[2-chloro-6-(fluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 6-[2-(fluorométhyl)-6-méthylpyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ;
 6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine ; et
 6-(2-bromo-6-méthylpyridin-4-yl)-5-phényl-1,2,4-triazin-3-amine.

7. Un composé choisi du groupe comprenant :

6-(2-chloro-6-méthylpyridin-4-yl)-5-(4-fluorophényl)-1,2,4-triazin-3-amine et
 6-[2-méthyl-6-(trifluorométhyl)pyridin-4-yl]-5-phényl-1,2,4-triazin-3-amine

ou un sel ou un solvate pharmaceutiquement acceptable de ceux-ci.

8. Un composé, suivant la revendication dans une quelconque des revendications 1 à 7, dans laquelle :

B représente un groupe Cy^{BB} or Het^{BB}, dont le groupe est soit non substitué ou est soit substitué par un ou plusieurs substituants sélectionnés à partir de fluoro, CN, OR⁸ ou alkyle en C₁₋₆ éventuellement substitué par un ou plusieurs substituants sélectionnés à partir de halo et OR^{5a}, dans laquelle R^{5a} et R⁸ sont suivant la définition dans la revendication 1

éventuellement, dans laquelle B représente un groupe Cy^{BB} or Het^{BB}, dont le groupe est soit non substitué ou est soit substitué par fluoro en position 4 par rapport au point de fixation au noyau triazine.

9. Un composé de formule I, suivant la définition dans une quelconque des revendications 1 à 7 destiné à l'utilisation dans le traitement d'un état de santé ou de trouble amélioré par l'inhibition du récepteur A₁ ou du récepteur A_{2a} dans laquelle l'état de santé ou le trouble est sélectionné à partir de : insuffisance cardiaque ; insuffisance rénale ; oedème ; cancer ; diabète ; diarrhée ; dégénérescence maculaire ; dépression ; maladies de la fonction cognitive ; une maladie neurodégénérative ; un trouble connexe à l'attention ; syndrome extrapyramidal ; un trouble du mouvement anormal ; cirrhose ; fibrose du foie ; stéatose hépatique ; fibrose dermique ; un trouble du sommeil ; accident vasculaire cérébral ; lésions cérébrales ou neuroinflammation ; et comportement de dépendance.

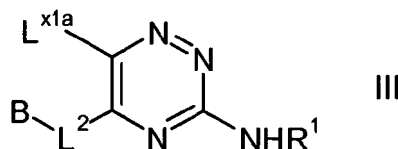
10. L'utilisation d'un composé de formule I, suivant la définition dans une quelconque des revendications 1 à 7 destiné à la fabrication d'un médicament servant au traitement d'un état de santé ou de trouble amélioré par inhibition du récepteur A₁ ou du récepteur A_{2a} dans laquelle l'état de santé ou le trouble est sélectionné à partir de : insuffisance cardiaque ; insuffisance rénale ; oedème ; cancer ; diabète ; diarrhée ; dégénérescence maculaire ; dépression ; maladies de la fonction cognitive ; une maladie neurodégénérative ; un trouble connexe à l'attention ; syndrome extrapyramidal ; un trouble du mouvement anormal ; cirrhose ; fibrose du foie ; stéatose hépatique ; fibrose dermique ; un trouble du sommeil ; accident vasculaire cérébral ; lésions cérébrales ou neuroinflammation ; et comportement de dépendance.

11. Utilisation suivant la revendication dans la revendication 10 ou composé destiné à l'utilisation suivant la revendication dans la revendication 9, dans laquelle l'état de santé ou le trouble est amélioré par l'inhibition du récepteur A_{2a} et est sélectionné à partir de dépression ; maladies de la fonction cognitive ; une maladie neurodégénérative ; un trouble connexe à l'attention ; syndrome extrapyramidal ; un trouble du mouvement anormal ; cirrhose ; fibrose du foie ; stéatose hépatique ; fibrose dermique ; un trouble du sommeil ; accident vasculaire cérébral ; lésions cérébrales ou neuroinflammation ; et comportement de dépendance.

12. Utilisation suivant la revendication dans la revendication 10 ou la revendication 11 ou composé destiné à l'utilisation suivant la revendication dans la revendication 9 ou la revendication 11, dans laquelle l'état de santé ou le trouble est la migraine.
13. Utilisation suivant la revendication dans la revendication 10 ou la revendication 11 ou composé destiné à l'utilisation suivant la revendication dans la revendication 9 ou la revendication 11, dans laquelle la maladie neurodégénérative est la maladie de Parkinson, la maladie de Huntington, la maladie d'Alzheimer ou la sclérose latérale amyotrophique.
14. Utilisation ou composé destiné à l'utilisation suivant la revendication dans la revendication 13, dans laquelle l'état de santé ou le trouble amélioré par inhibition du récepteur A_{2a} est la maladie de Parkinson.
15. Utilisation suivant la revendication dans la revendication 10 ou la revendication 11 ou composé destiné à l'utilisation suivant la revendication dans la revendication 9 ou la revendication 11, dans laquelle l'état de santé ou le trouble amélioré par l'inhibition du récepteur A_{2a} est le comportement de dépendance ou trouble déficitaire de l'attention avec hyperactivité (TDAH).
16. Composé destiné à l'utilisation, suivant la revendication dans la revendication 9 ou la revendication 11, ou utilisation suivant la revendication dans la revendication 10 ou la revendication 11, dans laquelle l'état de santé ou le trouble amélioré par l'inhibition du récepteur A_1 est l'atténuation des dommages rénaux causés par insuffisance rénale aiguë, oedème, insuffisance cardiaque, maladie rénale chronique et/ou cirrhose.
17. Un composé de formule lyd, suivant la définition dans une quelconque des revendications 1 à 7 destiné à l'utilisation dans l'atténuation des dommages causés aux reins par insuffisance rénale aiguë, oedème, insuffisance cardiaque, maladie rénale chronique et/ou cirrhose.
18. L'utilisation de composé de formule lyd, suivant la définition dans une quelconque des revendications 1 à 7 destiné à la fabrication d'un médicament servant à l'atténuation des dommages causés aux reins par insuffisance rénale aiguë, oedème, insuffisance cardiaque, maladie rénale chronique et/ou cirrhose.
19. Un composé de formule lyd, suivant la revendication dans une quelconque des revendications 1 à 7, destiné à l'utilisation en médecine.
20. Une formulation pharmaceutique comprenant un composé de formule lyd suivant la définition dans une quelconque des revendications 1 à 7 en mélange avec un adjuvant, diluant ou support pharmaceutiquement acceptable.
21. Un procédé destiné à la préparation d'un composé de formule lyd suivant la définition dans une quelconque des revendications 1 à 7, dont le procédé comprend ;

(i)

(a) réaction d'un composé de formule III,

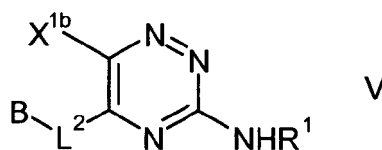


dans laquelle L^{x1a} représente un halogénure métallisé, $-Sn(R^{x1})_3$, un dérivé alkyle-cyclotriboroxane, $-B(OH)_2$, $-B(OR^{x1})_2$ ou un organosilane, dans laquelle R^{x1} mentionné indépendamment dans la description représente un groupe alkyle en C_{1-6} ou, dans le cas de $-B(OR^{x1})_2$, les deux groupes R^{x1} peuvent être reliés ensemble pour former un groupe cyclique de 4 à 6 éléments, L^2 représente une liaison directe, R^1 représente H et B est suivant la définition dans la revendication 1, comportant un composé de formule IV,



dans laquelle X^{1a} représente un groupe partant approprié et A représente le groupe pyridine-4-yl substitué requis suivant la définition dans la revendication 1 ;

(b) réaction d'un composé de formule V,



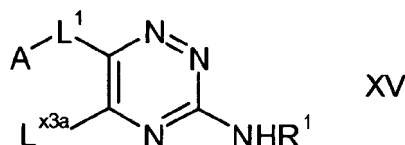
dans laquelle X^{1b} représente un groupe partant approprié, L^2 représente une liaison directe, R^1 représente H et B suivant la définition dans la revendication 1, comportant un composé de formule VI,



dans laquelle L^{x1b} représente un halogénure métallisé, $-\text{Sn}(\text{R}^{x1})_3$, un dérivé alkyle-cyclotriboroxane, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$ ou un organosilane, dans laquelle chaque R^{x1} est suivant la définition ci-dessus et A représente le groupe pyridine-4-yl substitué requis suivant la définition dans la revendication 1 ;

(ii)

(a) réaction d'un composé de formule XV,

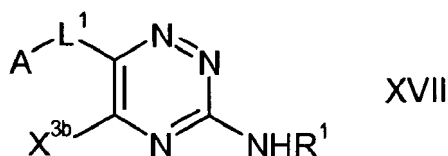


dans laquelle L^{x3a} représente un halogénure métallisé, $-\text{Sn}(\text{R}^{x1})_3$, un dérivé alkyle-cyclotriboroxane, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$ ou un organosilane, dans laquelle chaque R^{x1} est suivant la définition ci-dessus, L^1 représente une liaison directe, R^1 représente H et A représente le groupe pyridine-4-yl substitué requis suivant la définition dans la revendication 1, comportant un composé de formule XVI,



dans la description X^{3a} représente un groupe partant approprié et B est suivant la définition dans la revendication 1 ;

(b) réaction d'un composé de formule XVII,

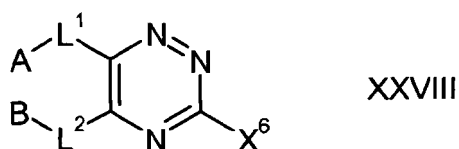


dans laquelle X^{3b} représente un groupe partant approprié, L^1 représente une liaison directe, R^1 représente H et A représente le groupe pyridine-4-yl substitué requis suivant la définition dans la revendication 1, comportant un composé de formule XVIII,



dans laquelle L^{x3b} représente un halogénure métallisé, $-\text{Sn}(\text{R}^{x1})_3$, un dérivé alkyle-cyclotriboroxane, $-\text{B}(\text{OH})_2$, $-\text{B}(\text{OR}^{x1})_2$ ou un organosilane, dans laquelle chaque R^{x1} est suivant la définition ci-dessus et B est suivant la définition dans la revendication 1 ;

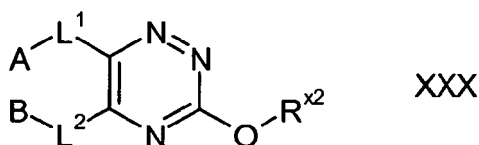
(iii) réaction d'un composé de formule XXVIII,



dans laquelle X^6 représente un tel groupe partant approprié, L^1 et L^2 représentent des liaisons directes, A représente le groupe pyridine-4-yl substitué requis suivant la définition dans la revendication 1 et B est suivant la définition dans la revendication 1, comportant un composé de formule XXIX,



dans laquelle R^1 est H ;
(iv) réaction d'un composé de formule XXX,



dans laquelle R^{x2} représente un groupe partant approprié, L^1 et L^2 représentent des liaisons directes, A représente le groupe pyridine-4-yl substitué requis suivant la définition dans la revendication 1 et B est suivant la définition dans la revendication 1, comportant un composé de formule XXIX,

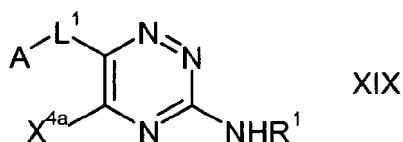
(v) réaction d'un composé de formule XXXI,



dans laquelle A représente le groupe pyridine-4-yl substitué requis suivant la définition dans la revendication 1 et B est suivant la définition dans la revendication 1, comportant un composé de formule XXXII,



dans laquelle R^1 est H ;
(vii) pour les composés de la formule Iy dans lesquels B représente un groupe Het^{BB} contenant de l'azote qui est attaché *par l'intermédiaire* d'un atome d'azote dans le système de noyau, réaction d'un composé de formule XIX,



dans laquelle X^{4a} représente un groupe partant approprié, L^1 représente une liaison directe, R^1 représente H et A représente le groupe pyridine-4-yl substitué requis suivant la définition dans la revendication 1, comportant un composé de formule XXXIV,



dans laquelle Het^{B1} prend la même définition que Het^{BB} suivant la définition ci-dessus, sauf que Het^{B1} est un

hétérocycle contenant de l'azote qui est attaché à l'atome d'H représenté pour le composé de formule XXXIV par l'intermédiaire d'un atome d'azote dans l'hétérocycle ; et
 (ix) pour les composés de formule Iy dans laquelle un des R^{4b'}, R^{4b}, R^{4c} et R^{4d} représente -OH, réaction d'un composé de formule Iy dans laquelle l'un des R^{4b'}, R^{4b}, R^{4c} et R^{4d} représente -OR^{4y}, dans laquelle R^{4y} représente un alkyle en C₁₋₆, alcényle en C₂₋₆, alcynyle en C₂₋₆ ou cycloalkyle en C₃₋₆, dont les groupes sont éventuellement substitués par un ou plusieurs substituants sélectionnés à partir de halo, alkyle en C₁₋₄ et aryle, comportant un agent de désalkylation.

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO 02055083 A [0010]
- WO 05044245 A [0010]
- WO 06132275 A [0010]
- US 2007037033 A [0010]
- WO 01058241 A [0010]
- WO 06009698 A [0010]
- WO 9202513 A [0017] [0156] [0160]
- WO 0066568 A [0017] [0156]
- WO 03077921 A [0017]
- WO 2005117883 A [0017]
- WO 2006051311 A [0017]
- WO 2006113704 A [0017]
- WO 2009090431 A [0017]
- US 20040102436 A [0017]
- US 20040229873 A [0017]
- US 20070135437 A [0017]
- EP 1400518 A [0017]
- GB 1604085 A [0017]
- US 4008232 A [0018]
- FR 2869906 [0018]
- FR 2485531 [0157]

Non-patent literature cited in the description

- *Chemical & Engineering News*, 2005, vol. 83 (25) [0004]
- NORTON et al. *Am J Physiol.*, 1999, vol. 276, H341-9 [0007]
- AUCHAMPACH ; BOLLI. *Am J Physiol.*, 1999, vol. 276, H1113-6 [0007]
- COSTELLO-BOERRIGTER et al. *Med Clin North Am.*, March 2003, vol. 87 ((2)), 475-91 [0007]
- GOTTLIEB. *Drugs*, 2001, vol. 61 (10), 1387-93 [0007]
- FEOKTISTOV et al. *Pharmacol. Rev.*, 1997, vol. 49, 381-402 [0007]
- CUNHA et al. *Curr Pharm Des*, 2008, vol. 14 ((15)), 1512-1524 [0009]
- TUIITE P et al. *J: Expert Opin. Investig. Drugs*, 2003, vol. 12, 1335-52 [0010]
- POPOLI P. et al. *J Neurosci.*, 2002, vol. 22, 1967-75 [0010]
- DALL'LGNA et al. *Experimental Neurology*, 2007, 241-245 [0010]
- JENNER P. J. *Neurol*, 2000, vol. 247 (2), 1143-50 [0010]
- HAPPE S et al. *Neuropsychobiology*, 2003, vol. 48, 82-6 [0010]
- CHAN et al. *Arthritis & Rheumatism*, 2006, vol. 54 (8), 2632-2642 [0010]
- STONE TW. et al. *Drug. Dev. Res*, 2001, vol. 52, 323-330 [0011]
- DUNWIDDIE TV et al. *Ann. Rev. Neurosci.*, 2001, vol. 24, 31-55 [0011]
- KUROKOWA et al. *Program No. 714.4/B101.*, 2009 [0011]
- *Nature Reviews Drug Discovery*, 2006, vol. 5, 247-264 [0012]
- *Journal of Pharmacology and Experimental Therapeutics*, 2007, vol. 323 ((2)), 708-719 [0012]
- *British Journal of Pharmacology*, 2008, vol. 155, 475-486 [0012]
- *Journal of the Americana College of Cardiology*, 2007, vol. 50 ((16)), 1551-1560 [0012]
- *Pharmacology and Therapeutics*, 2009, vol. 123, 105-116 [0012]
- GELLAI et al. *J Pharmacol Exp Ther*, 1998, vol. 286, 1191-1196 [0013]
- *J Am Coll Cardiol*, 2007, vol. 50, 1551-1560 [0013]
- SATOH et al. *Gastroenterol*, 2000, vol. 119 (3), 829-36 [0013]
- GESSI S et al. *Pharmacol. Ther.*, 2008, vol. 117 ((1)), 123-140 [0014]
- DOIG et al. *Journal of Chromatography*, 1991, vol. 554 (1-2), 181-189 [0018]
- MALLIKARJUNA et al. *Zhejiang Univ Sci B*, 2007, vol. 8 ((7)), 526-532 [0018]
- DAVIDSON et al. *Journal of Pharmaceutical Sciences*, 1978, vol. 67 ((5)), 737-739 [0018]
- EID et al. *Indian Journal of Chemistry, Section B*, 1990, vol. 29B (5), 435-439 [0018]
- ZOU et al. *Chinese Journal of Chemistry*, 1998, vol. 16 ((1)), 58-64 [0018]
- LU et al. *Youji Huaxue*, 1992, vol. 12 (6), 605-607 [0018]
- LU et al. *Organic Preparations and Procedures International*, 1992, vol. 24 ((3)), 358-362 [0018]
- KONNO et al. *Heterocycles*, 1982, vol. 19 ((10)), 1865-8 [0018]
- BRYN et al. *Solid-State Chemistry of Drugs*. SSCI, Inc, 1999 [0028]

- **BUNDEGAARD, H.** Design of Prodrugs. Elsevier, 1985, 1-92 [0032]
- **JERRY MARCH.** Advanced Organic Chemistry. Wiley Interscience, 1992, 131-133 [0062]
- **REMINGTON.** The Science and Practice of Pharmacy. Mack Printing Company, 1995 [0141]
- **LANGER.** *Science*, 1990, vol. 249, 1527 [0141]
- **QUACH et al.** *Org. Lett.*, 2003, vol. 5, 4397-4400 [0156]
- **WOLFE et al.** *Org. Synth.*, 2004, vol. 10, 423 [0156]
- **I. RYU et al.** *J. Am. Chem. Soc.*, 2002, vol. 124, 12946-12947 [0156]
- **J. MAGANO et al.** *J. Org. Chem.*, 2006, vol. 71, 7103-7105 [0156]
- **S. K. BOOVANAHALLI et al.** *J. Org. Chem.*, 2004, vol. 69, 3340-3344 [0156]
- **J. M. MURPHY ; C. C. TZSCHUCKE ; J. F. HARTWIG.** *Org. Lett.*, 2007, vol. 9, 757-760 [0161]
- Protective Groups in Organic Chemistry. Plenum Press, 1973 [0169]
- **T.W. GREENE ; P.G.M. WUTZ.** Protective Groups in Organic Synthesis. Wiley-Interscience, 1999 [0169]
- **HODGSON et al.** *J. Pharmacol. Exp. Ther.*, 2009, vol. 330, 294-303 [0177]