

Title (en)
USE OF PHOSPHODIESTERASE IV INHIBITORS

Title (de)
VERWENDUNG VON PHOSPHODIESTERASE IV - INHIBITOREN

Title (fr)
UTILISATION D'INHIBITEURS DE LA PHOSPHODIESTERASE IV

Publication
EP 1435958 A1 20040714 (DE)

Application
EP 02777150 A 20020919

Priority
• DE 10150517 A 20011012
• EP 0210507 W 20020919

Abstract (en)
[origin: DE10150517A1] The use of phenyl-substituted 2,3,4,5-tetrahydro-pyridazin-3-one, 3,6-dihydro-thiadiazin-2-one or 3,6-dihydro-oxadiazin-2-one derivatives (I) for treatment of osteoporosis, tumors, tumor metastases, atherosclerosis, rheumatoid arthritis, multiple sclerosis, diabetes mellitus, ulcerative colitis or AIDS. The use of phenyl-substituted 2,3,4,5-tetrahydro-pyridazin-3-one, 3,6-dihydro-thiadiazin-2-one or 3,6-dihydro-oxadiazin-2-one derivatives of formula (I) or their salts, for treatment of osteoporosis, tumors, tumor metastases, atherosclerosis, rheumatoid arthritis, multiple sclerosis, diabetes mellitus, ulcerative colitis or AIDS. (i) X = CH₂ or S, provided that R<3> is in the 3-position and R<4> in the 4-position if X = S; Q = -Q'-R<5>; R<1>, R<2> = H or A; R<3>, R<4> = OH, OR<10>, SR<10>, SOR<10>, SO₂R<10>, halo, OCH₂O, NO₂, NH₂, NHR<10> or NR<10>R<11>; R<5> = phenyl (optionally substituted (os) by R<6> and/or R<7>); Q' = direct bond or 1-6C alkylene; R<6>, R<7> = NH₂, NR<8>R<9>, NHR<10>, NR<10>R<11>, NO₂, halo, OA, COOH or COOA; R<8>, R<9> = H, 1-8C acyl (os by 1-5 F and/or Cl), COOA, SOA, SO₂A, CONH₂, CONHA, CONA₂, COCOOH, COCOOA, COCONH₂, COCONHA or COCONA₂; A = 1-6C alkyl (os by 1-5 F and/or Cl); R<10>, R<11> = A, 3-7C cycloalkyl, 4-8C methylenecycloalkyl or 2-8C alkenyl; (ii) X = CH₂, S or O; Q = -Q'-C₆H₄-NHCOB; Q' = direct bond or 1-6C alkylene; B = aromatic heterocycle with 1-4 N, O and/or S heteroatom(s), bonded via N or C, os by 1-3 of halo, A and/or OA and optionally fused with a benzene or pyridine ring; R<1>, R<2> = H or A; R<3>, R<4> = OH, OR<5>, SR<5>, SOR<5>, SO₂R<5>, halo, OCH₂O, NO₂, NH₂, NHR<5> or NR<5>R<6>, R<3> being in the 3-position and R<4> in the 4-position; R<5>, R<6> = A, 3-7C cycloalkyl, 4-8C methylenecycloalkyl or 2-8C alkenyl; A = 1-10C alkyl (os by 1-5 F and/or Cl); (iii) X = S; Q = H; R<1>, R<2> = H or A; R<3> = H, OA or OA'; R<4> = OA'; A = 1-6C alkyl; A' = 1-6C alkyl, substituted by 1-13 F or Cl; (iv) X = S; Q = -Q'-R<5>; Q' = 1-6C alkylene; R<5> = NR<6>R<7>; or tri-, tetra-, penta- or hexamethyleneimino (optionally having one CH₂ replaced by O); R<1>, R<2>, R<6>, R<7> = H or A; R<3>, R<4> = OH, OA, SA, SOA, SO₂A, halo, OCH₂O, 3-7C cycloalkoxy or OA'; A = 1-6C alkyl; A' = 1-6C alkyl, substituted by 1-13 F; or (v) X = CH₂ or S; Q = -Q'-C₆H₄-NHCOB; Q' = direct bond or 1-4C alkylene; B = -YR<5> or -O-YR<5>; Y = direct bond or 1-10C alkylene; R<3>, R<4> = OH, OA, SA, SOA, SO₂A, halo, OCH₂O, NO₂, NH₂, NHA or NAA', R<3> being in the 3-position and R<4> in the 4-position; A, A' = 1-10C alkyl (os by 1-5 F and/or Cl), 3-7C cycloalkyl or 4-8C methylenecycloalkyl; R<5> = NH₂, NHA, NA₂ or 3-8 membered saturated heterocycle (containing at least one N, os by A or OH and optionally having further CH₂ groups replaced by NA, S or O).

IPC 1-7
A61K 31/50; **A61K 31/54**; **A61K 31/535**; **A61P 19/10**; **A61P 35/00**; **A61P 37/00**; **A61P 3/10**

IPC 8 full level
A61K 31/50 (2006.01); **A61K 31/501** (2006.01); **A61K 31/535** (2006.01); **A61K 31/5395** (2006.01); **A61K 31/54** (2006.01); **A61K 31/549** (2006.01); **A61P 1/04** (2006.01); **C07D 237/04** (2006.01); **A61P 3/10** (2006.01); **A61P 9/10** (2006.01); **A61P 19/02** (2006.01); **A61P 19/10** (2006.01); **A61P 25/00** (2006.01); **A61P 29/00** (2006.01); **A61P 31/18** (2006.01); **A61P 35/00** (2006.01); **A61P 35/04** (2006.01); **A61P 37/00** (2006.01); **A61P 43/00** (2006.01); **C07D 285/16** (2006.01); **C07D 401/12** (2006.01); **C07D 411/12** (2006.01); **C07D 413/12** (2006.01)

CPC (source: EP KR US)
A61K 31/50 (2013.01 - EP US); **A61K 31/501** (2013.01 - KR); **A61K 31/535** (2013.01 - EP US); **A61K 31/54** (2013.01 - EP US); **A61P 1/04** (2018.01 - EP); **A61P 3/08** (2018.01 - EP); **A61P 3/10** (2018.01 - EP); **A61P 9/10** (2018.01 - EP); **A61P 19/02** (2018.01 - EP); **A61P 19/10** (2018.01 - EP); **A61P 25/00** (2018.01 - EP); **A61P 29/00** (2018.01 - EP); **A61P 31/00** (2018.01 - EP); **A61P 31/18** (2018.01 - EP); **A61P 35/00** (2018.01 - EP); **A61P 35/04** (2018.01 - EP); **A61P 37/00** (2018.01 - EP); **A61P 43/00** (2018.01 - EP)

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

DOCDB simple family (publication)
US 2004235845 A1 20041125; AR 037741 A1 20041201; AU 2002338734 B2 20071108; CA 2460135 A1 20030424; CA 2460135 C 20100824; CN 1564687 A 20050112; CZ 2004457 A3 20050413; DE 10150517 A1 20030417; EP 1435958 A1 20040714; HU P0401641 A2 20041129; HU P0401641 A3 20070228; JP 2005505604 A 20050224; KR 20050028900 A 20050323; MX PA04002639 A 20040607; NO 20041938 L 20040511; SK 1652004 A3 20050505; WO 03032993 A1 20030424

DOCDB simple family (application)
US 49236704 A 20040412; AR P020103824 A 20021011; AU 2002338734 A 20020919; CA 2460135 A 20020919; CN 02819863 A 20020919; CZ 2004457 A 20020919; DE 10150517 A 20011012; EP 0210507 W 20020919; EP 02777150 A 20020919; HU P0401641 A 20020919; JP 2003535796 A 20020919; KR 20047005415 A 20040412; MX PA04002639 A 20020919; NO 20041938 A 20040511; SK 1652004 A 20020919