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(54) **Treatment of cancers of the human body using ET743**

Behandlung von Krebs beim Menschen mit ET743

Traitement de cancer chez l'humain avec ET743

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(73) Proprietor: **Pharma Mar, S.A.**
28760 Madrid (ES)

(72) Inventors:
• **Cvltkovic, Esteban**
94278 Le Kremlin-Bicetre (FR)

- **Demetri, George Daniel**
Dept. of Adult Oncology
Boston 02115
Massachusetts (US)
- **Guzman, Cecilia**
Pharma Mar, S.A.U.
28770, Colmenar Viejo, Madrid (ES)
- **Jimeno, José, Pharma Mar S.A.U.**
28770 Colmenar Viejo, Madrid (ES)
- **López Lázaro, Luis**
Pharma Mar S.A.U.
28770 Colmenar Viejo, Madrid (ES)
- **Misset, Jean Louis**
Service d'Oncologie
Hospital
Villejuif
94804 Villejuif Cedex
(FR)
- **Twelves, Chris**
Clinical Cancer Pharma.& Oncology
Richmond Road BD7 3AY (GB)
- **Von Hoff, Daniel D.**
Arizona Cancer Center
Tucson 85724-5024
Arizona (US)

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(74) Representative: **Williams, Gareth Owen**
Marks & Clerk LLP
62-68 Hills Road
Cambridge
CB2 1LA (GB)

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Description

[0001] The present invention relates to claim 1.

5 Background of Invention

[0002] Cancer comprises a group of malignant neoplasms that can be divided into two categories, carcinoma, comprising a majority of the cases observed in the clinics, and other less frequent cancers, which include leukemia, lymphoma, central nervous system tumours and sarcoma. Carcinomas have their origin in epithelial tissues while sarcomas develop from connective tissues and those structures that had their origin in mesoderm tissues. Sarcomas can affect, for instance, muscle or bone and occur in the bones, bladder, kidneys, liver, lung, parotid or spleen.

[0003] Cancer is invasive and tends to metastasise to new sites. It spreads directly into surrounding tissues and also may be disseminated through the lymphatic and circulatory systems. Many treatments are available for cancer, including surgery and radiation for localised disease, and drugs. However, the efficacy of available treatments on many cancer types is limited, and new, improved forms of treatment showing clinical benefit are needed. This is especially true for those patients presenting with advanced and/or metastatic disease. It is also true for patients relapsing with progressive disease after having been previously treated with established therapies for which further treatment with the same therapy is mostly ineffective due to acquisition of resistance or to limitations in administration of the therapies due to associated toxicities.

[0004] Chemotherapy plays a significant part in cancer treatment, as it is required for treatment of advanced cancers with distant metastasis and often helpful for tumor reduction before surgery, and many anti-cancer drugs have been developed based on various modes of action.

[0005] The ecteinascidins are marine alkaloids and some of them possess potent *in vitro* antitumour activity. Several ecteinascidins have been reported previously in the patent and scientific literature.

[0006] For example, U.S. Patent N° 5,089,273 describes novel compositions of matter extracted from the tropical marine invertebrate, *Ecteinascidia turbinata*, and designated therein as ecteinascidins 729, 743, 745, 759A, 759B and 770. These compounds are useful as antibacterial and / or antitumour agents in mammals.

[0007] U.S. Patent N° 5,256,663 describes pharmaceutical compositions comprising matter extracted from the tropical marine invertebrate, *Ecteinascidia turbinata*, and designated therein as ecteinascidins, and the use of such compositions as antibacterial, anti-viral, and/or antitumour agents in mammals.

[0008] U.S. Patent N° 5,478,932 describes ecteinascidins isolated from the Caribbean tunicate *Ecteinascidia turbinata*, which provide *in vivo* protection against P388 lymphoma, B16 melanoma, M5076 ovarian sarcoma, Lewis lung carcinoma, and the LX-1 human lung and MX-1 human mammary carcinoma xenografts.

[0009] U.S. Patent N° 5,654,426 describes several ecteinascidins isolated from the Caribbean tunicate *Ecteinascidia turbinata*, which provide *in vivo* protection against P388 lymphoma, B16 melanoma, M5076 ovarian sarcoma, Lewis lung carcinoma, and the LX-1 human lung and MX-1 human mammary carcinoma xenografts.

[0010] U.S. Patent N°. 5,721,352 describes a synthetic process for the formation of ecteinascidin compounds and related structures.

[0011] Further background is to be found illustratively in: Corey, E.J., J. Am. Chem. Soc., 1996, 118 pp. 9202-9203; Rinehart, et al., Journal of Natural Products, 1990, "Bioactive Compounds from Aquatic and Terrestrial Sources", vol. 53, pp. 771-792; Rinehart et al., Pure and Appl. Chem., 1990, "Biologically active natural products", vol 62, pp. 1277-1280; Rinehart, et al., J. Org. Chem., 1990, "Ecteinascidins 729, 743, 745, 759A, 759B, and 770: Potent Antitumour Agents from the Caribbean Tunicate *Ecteinascidia turbinata*", vol. 55, pp. 4512-4515; Wright et al., J. Org. Chem., 1990, "Antitumour Tetrahydroisoquinoline Alkaloids from the Colonial Ascidian *Ecteinascidia turbinata*", vol. 55, pp. 4508-4512; Sakai et al., Proc. Natl. Acad. Sci. USA 1992, "Additional antitumour ecteinascidins from a Caribbean tunicate: Crystal structures and activities *in vivo*", vol. 89, 11455-11460; Science 1994, "Chemical Prospectors Scour the Seas for Promising Drugs", vol. 266, pp. 1324; Koenig, K.E., "Asymmetric Synthesis", ed. Morrison, Academic Press, Inc., Orlando, FL, vol. 5, 1985, p. 71; Barton, et al., J. Chem Soc. Perkin Trans., 1, 1982, "Synthesis and Properties of a Series of Sterically Hindered Guanidine Bases", pp. 2085; Fukuyama et al., J. Am Chem. Soc., 1982, "Stereocontrolled Total Synthesis of (+) - Saframycin B", vol. 104, pp. 4957; Fukuyama et al., J. Am Chem Soc., 1990, "Total Synthesis of (+) - Saframycin A", vol. 112, p. 3712; Saito, et al., J. Org. Chem., 1989, "Synthesis of Saframycins. Preparation of a Key Tricyclic Lactam Intermediate to Saframycin A", vol. 54, 5391; Still, et al., J. Org. Chem., 1978, "Rapid Chromatographic Technique for Preparative Separations with Moderate Resolution", vol. 43, p. 2923; Kofron, W.G.; Baclawski, L.M., J. Org. Chem., 1976, vol. 41, 1879; Guan et al., J. Biomolec. Struc. & Dynam., vol. 10 pp. 793-817 (1993); Shamma et al., "Carbon-13 NMR Shift Assignments of Amines and Alkaloids", p. 206 (1979); Lown et al., Biochemistry, 21, 419-425 (1982); Zmijewski et al., Chem. Biol. Interactions, 52, 361-375 (1985); Ito, CRC CRIT. Rev. Anal. Chem., 17, 65-143 (1986); Rinehart et al., "Topics in Pharmaceutical Sciences 1989" pp. 613-626, D. D. Breimer, D.J. A. Cromwelin, K.K. Midha, Eds., Amsterdam Medical Press B.V., Noordwijk, The Netherlands (1989); Rinehart et al., "Biological Mass

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[0012] In particular, ecteinascidin 743 has been found also to exhibit promising action when tested in animal models, as, for example, when evaluated against xenografts of breast cancer, non-small cell lung, melanoma and ovarian cancer.

[0013] A paper on in vitro antitumour activity of the novel marine agent, Ecteinascidin-743 (ET-743, NSC-648766) against human tumours explanted from patients, Annals of Oncology, 9: 981-987, 1998, is typical of the in vivo reports. The authors conclude from their data that continuous or protracted exposure may enhance activity. In the same issue of that journal at pages 989-993, a paper on in vitro schedule-dependency of myelotoxicity and cytotoxicity of Ecteinascidin 743 (ET-743) concludes that prolonged exposure might represent the best schedule of administration.

[0014] Lansiaux (Bull. du Cancer, 86, (2), 1999, pages 139-141) relates to ET-743 and its mechanism of action. Phase 1 clinical trial results are also disclosed. Taamma et al (Proc.Am.Ass.Cnc.Res., 39, 1998, page 323) discloses the dose escalation study of ET-743. Rosing et al (Proc.Am.Ass.Cnc.Res., 40, 1999, page 81) also teaches phase 1 studies with data relating to pharmacokinetic experiments.

Summary of Invention

[0015] The invention relates to ET-743 for use in the treatment of the human body for cancer, comprising administering ET-743 by intravenous infusion at a dosage of 1500 micrograms per m² of body surface area, over a period of 24 hours, wherein the cancer is sarcoma, leading to clinical improvement.

Embodiments of the Invention

[0016] Thus, the present invention provides claim 1.

[0017] Administration according to the present invention is by intravenous infusion over a period of 24 hours. Infusion may be carried out at suitable intervals of say 1 to 6 weeks. Further guidance is given later in this text.

[0018] The compound ET743 and compositions of this invention may be used with other drugs to provide a combination therapy. The other drugs may form part of the same composition, or be provided as a separate composition for administration at the same time or a different time. The identity of the other drug is not particularly limited, and suitable candidates include:

- a) drugs with antimetabolic effects, especially those which target cytoskeletal elements, including microtubule modulators such as taxane drugs (such as taxol, paclitaxel, taxotere, docetaxel), podophylotoxins or vinca alkaloids (vincristine, vinblastine);
- b) antimetabolite drugs (such as 5-fluorouracil, cytarabine, gemcitabine, purine analogues such as pentostatin, methotrexate);
- c) alkylating agents or nitrogen mustards (such as nitrosoureas, cyclophosphamide or ifosfamide);
- d) drugs which target DNA such as the anthracycline drugs adriamycin, doxorubicin, pharmorubicin or epirubicin;
- e) drugs which target topoisomerases such as etoposide;
- f) hormones and hormone agonists or antagonists such as estrogens, antiestrogens (tamoxifen and related compounds) and androgens, flutamide, leuprorelin, goserelin, cyprotrone or octreotide;
- g) drugs which target signal transduction in tumour cells including antibody derivatives such as herceptin;
- h) alkylating drugs such as platinum drugs (cis-platin, carbonplatin, oxaliplatin, paraplatin) or nitrosoureas;
- i) drugs potentially affecting metastasis of tumours such as matrix metalloproteinase inhibitors;
- j) gene therapy and antisense agents;
- k) antibody therapeutics;
- l) other bioactive compounds of marine origin, notably the didemnins such as aplidine;
- m) steroid analogues, in particular dexamethasone;
- n) anti-inflammatory drugs, including nonsteroidal agents (such as acetaminophen or ibuprofen) or steroids and their derivatives in particular dexamethasone; and
- o) anti-emetic drugs, including 5HT-3 inhibitors (such as granisetron or ondasetron), and steroids and their derivatives in particular dexamethasone.

[0019] The present invention also extends to the compounds described herein for use in a method of treatment, and to the use of the compounds in the preparation of a composition for treatment of sarcoma.

[0020] Patient responses have been observed in clinical trials with ET-743, demonstrating usefulness of the method

of treatment.

[0021] Phase I clinical studies and pharmacokinetic analysis demonstrate that ET-743 presents a positive therapeutic window with manageable toxicity in the range of dosage required for clinical efficacy in the treatment of cancer patients.

[0022] The use consists of administration of drug by intravenous infusion over a period of 24 hrs at the recommended dose level (RD) with or without combination with other therapeutic agents.

[0023] ET-743 is supplied and stored as a sterile lyophilized product, consisting of ET 743 and excipient in a formulation adequate for therapeutic use, in particular a formulation containing mannitol and a phosphate salt buffered to an adequate pH.

[0024] A preferred formulation, which shows improved stability at higher storage temperature, is one obtained from 1000 ml of 0.9% sodium chloride or other suitable infusion vehicle, 250 µg of ET-743 with 250 mg of mannitol, 34 mg of monopotassium phosphate and phosphoric acid to adjust to a pH between 4.00 and 6.00, with 4.80 being the preferred pH. The product is lyophilized and stored in the cold, between +4°C and -20°C and protected from light until use.

[0025] Preparation of the reconstituted solution is performed under aseptic conditions by adding distilled water in the amount of 5ml for every 250 µg of ET-743 and shaking for a short time to dissolve the solids.

[0026] Preparation of the infusion solution is also performed under aseptic conditions by withdrawing the reconstituted solution volume, corresponding to dosage calculated for each patient, and slowly injecting the required reconstituted solution volume into an infusion bag or bottle containing between 100 and 1000 ml of 0.9% sodium chloride solution, after which the whole is homogenised by slow manual shaking. The ET-743 infusion solution should be administered intravenously, as soon as possible, within 48 hours after preparation. PVC and polyethylene infusion systems, as well as clear glass are preferred container and conduit materials.

[0027] The administration is performed in cycles, in the preferred application method, an intravenous infusion of ET734 is given to the patients the first week of each cycle, the patients are allowed to recover for the remainder of the cycle. The preferred duration of each cycle is of either 3 or 4 weeks; multiple cycles can be given as needed. The drug may also be administered each of the first days of each cycle. Dose delays and/or dose reductions and schedule adjustments are performed as needed depending on individual patient tolerance of treatments, in particular dose reductions are recommended for patients with higher than normal serum levels of liver transaminases or alkaline phosphatase, or bilirubin.

[0028] The Recommended Dose (RD) is the highest dose which can be safely administered to a patient producing tolerable, manageable and reversible toxicity according to the Common Toxicity Criteria established by the National Cancer Institute, (USA) with no more than 2 out of 6 patients presenting any dose limiting toxicities (DLT). Guidelines for cancer therapy frequently call for administration of chemotherapeutic agents at the highest safe dose at which toxicity is manageable in order to achieve maximum efficacy (DeVita, V.T. Jr., Hellman, S. and Rosenberg, S.A., Cancer: Principles and Practice of Oncology, 3rd ed., 1989, Lipincott, Philadelphia).

[0029] DLTs for ET743 using this method of treatment were determined in clinical studies to be myelosuppression and malaise. These studies established a recommended dose level of 1500 microgram per m² of body surface area for 24hr infusions or 1650 microgram per m² body surface area for 3 hr infusions. Doses of 1800 microgram per m² or above resulted in too large a fraction of patients presenting DLT and thus were determined to be too toxic for safe administration

[0030] Whereas a case of a breast cancer response reported in June 98 was observed at a dose level of 1800 microgram/ m², a level considered unsafe at any rate on infusion because 2 out of 4 patients presented severe dose limiting toxic responses. Another previously reported case involved a response in a melanoma patient after a 1 hr infusion, which method does not allow reaching the recommended dose level without dose limiting thrombocytopenia and fatigue.

[0031] ET-743 can be safely administered at a dosage level at or below the Recommended Dose (RD).

[0032] In particular the invention relates to intravenous infusion over 24hr at a dose level of 1500 microgram per m².

[0033] When ET 743 is used in combination with other therapeutic agents, the dosages of both agents may need to be adjusted.

[0034] Previously the only biological responses reported to the administration of ET743 had been observed in animal or *in vitro* models, known to be notoriously inaccurate concerning their usefulness to predict responses in human patients, or in human patients in experimental settings where an effective, safe method of treatment was unavailable (either the dosage used was a toxic dose significantly elevated over the recommended dose or the administration schedule was not appropriate).

[0035] In clinical trials using the method of this invention, appropriate plasma levels were achieved in patients at RD, and most importantly, objectively measurable responses demonstrated evidence of clinical benefit to patients.

[0036] Definitions for patient responses are adopted from WHO Common Toxicity Criteria and the responses determined following standard medical practice in the field.

[0037] Objective responses were obtained in patients with advanced and/ or metastatic cancers refractory to previous treatments, which included soft tissue, bone and gastrointestinal stromal sarcoma, breast cancer and melanoma. Evidence of activity, using a variety of suboptimal schedules which has also been observed in advanced ocular melanoma and mesothelioma, and a positive clinical marker response in ovarian cancer suggests the method of this invention will

be useful in the treatment of these diseases as well.

[0038] In particular treatment with this method has shown responses in cancer patients with advanced and/or metastatic disease, which exhibited progressive disease after having been previously treated with established therapies.

5 **[0039]** A preferred method of this invention therefore involves identifying cancer patients who have been treated for cancer, particularly patients who have received chemotherapy, and treating them with ET743.

[0040] In particular treatment with this method has also shown responses in patients with sarcomas including soft tissue, bone and gastrointestinal stromal sarcomas. In particular treatment with this method has shown responses in patients with soft tissue sarcomas. In particular treatment with this method has shown responses in patients with bone sarcomas. In particular treatment with this method has shown responses in patients with gastrointestinal stromal sarcomas. In particular treatment with this method has shown responses in patients with breast cancers.

10 **[0041]** The table, Figure 1, shows responses observed with this method of treatment.

[0042] The invention is further illustrated by the following examples which relate to clinical trials in humans.

Example 1

15 **[0043]** Data was analyzed from trials with 24 h iv continuous infusion of ET 743 every 3 or 4 weeks at 1500 $\mu\text{g}/\text{m}^2$. Pharmacokinetics of ET-743 are monitored in all patients during the first cycle of therapy to assess interpatient variability and possible correlations with clinical activity or toxicity.

20 Patient population:

[0044]

- 25
- 16 advanced/metastatic soft tissue sarcoma (STS) patients
 - 12 soft tissue sarcoma patients with no prior chemotherapy treatments
 - 8 advanced/metastatic gastrointestinal stromal tumor (GIST) patients.

Safety/Toxicities observed:

30 **[0045]**

- Tolerability of treatment was very good.
Nausea essentially eliminated by use of dexamethasone as a prophylactic anti emetic
Myelosuppression
35 Temporary/asymptomatic transaminitis
Fatigue

[0046] Data showed no significant differences with early phase I data

40 Efficacy

[0047]

- 45
- 6 out of 10 evaluable STS patients without any prior chemotherapy treatment have exhibited stable disease or minor responses after 2 cycles of therapy,
 - 4 out of 12 evaluable STS patients with prior chemotherapy treatment have exhibited stable disease or minor responses after 2 cycles of therapy,
 - preliminary evidence of activity was observed in liposarcoma, leiomyo sarcoma, and synovial sarcoma.

50 Example 2 (for illustrative purposes only)

[0048] Data was analyzed from a trial with 24 h iv continuous infusion of ET 743 every 3 weeks on 20 pretreated advanced/metastatic breast cancer patients, at a dose level of 1500 $\mu\text{g}/\text{m}^2$.

55 Characteristics of patient population:

[0049] 20 women,
all presenting measurable disease and progressing at study entry age 33 to 64 years (median 50 yrs)

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performance status 0-1 (ECOG criteria)
minimum number of involved organs:2 (range 1-6)
disease sites:

5	cutaneous	12 (60%)
	liver	10 (50%)
	bone	9 (45%)
	lymph nodes	6 (30%)
10	pleuro pulmonary	6 (30%)
	Minimum number of prior chemotherapy treatments	2 (1-6)
	Patients previously treated with Anthracyclines	20
	Patients previously treated with Taxanes	16
	Patients resistant to Anthracyclines and Taxanes	5
15	Patients resistant to Taxanes only	2
	Patients resistant to Anthracyclines only	3

Safety/toxicities:

20 **[0050]**

	Total number of cycles administered	56
	minimum number of cycles per patient	2 (range 1-8)
25	Number of grade 3 or 4 toxicities reported per cycle.	
	Neutropenia	25 (50%)
	Thrombocytopenia	4 (2%)
	Reversible transaminitis	34 (60%)
30	Asthenia (grade 2/3)	13 (23%)

[0051] Data showed no significant differences with early phase I data

Efficacy

35 **[0052]** On 16 evaluable patients, Two partial responses were observed (pleuropulmonary and thoracic skin involvement) lasting 3.5 and over 2 months on patients without primary resistance to either pretreatment drug. Six patients achieved disease stabilization (over 2, 3, 3, over 3, 4.5 and over 6 months) including two with sustained decrease in CA 15-3 a marker for this disease.

40 Example 3

[0053] Data was analyzed from a trial with 24 h iv continuous infusion of ET 743 every 3 weeks on 20 pretreated advanced/metastatic soft tissue sarcoma patients, with all except two patients being treated at a dose level of 1500 μ g/m²

45 Characteristics of patient population:

[0054]

50 39 patients /22 female
35 Soft tissue sarcoma (STS)
3 osteosarcoma (OS)
1 Ewing sarcoma (ES)

55 22 patients had bulky disease at study entry, with 56% of disease progression under prior regime
age 16 to 71 years (median 45 yrs)
performance status 0 (0-2) (ECOG criteria)

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[0055] Minimum number of prior chemotherapy treatments 2 (1-7)

[0056] Most patients had received as prior chemotherapy treatments Anthracyclines and alkylators

Safety/toxicities:

5

[0057]

10

Total number of cycles administered	137
minimum number of cycles per patient	2 (range 1-12)
Number of grade 3 or 4 toxicities reported per cycle.	
Neutropenia	34%, with 6.5% febrile
Thrombocytopenia	5%
Acute, reversible transaminitis	44%
Asthenia (grade 2/3)	13 (23%)

15

[0058] Data showed no significant differences with early phase I data

Efficacy

20

[0059] On 34 evaluable patients,

4 partial responses (11.7%) were observed, two of which became post surgical complete response

3 minor responses were observed, one of which became post surgical complete response 11 disease stabilizations, most of which lasting 3 months or more

25

[0060] Responses were observed in various histological types, including 2 out of 3 osteo sarcomas, in all disease sites, including visceral metastases, in bulky and non bulky disease, and in anthracycline refractory and non refractory tumours.

30

Claims

1. ET743 for use in the treatment of the human body for cancer, comprising administering ET743 by intravenous infusion at a dosage of 1500 micrograms per m² of body surface area, over a period of 24 hours, wherein the cancer is sarcoma, leading to clinical improvement.

35

2. ET743 for use in the treatment of the human body for cancer according to claim 1, wherein the cancer is soft tissue sarcoma.

3. ET743 for use in the treatment of the human body for cancer according to claim 1, wherein the cancer is liposarcoma, leiomyosarcoma or synovial sarcoma.

40

4. ET743 for use in the treatment of the human body for cancer according to claim 1, wherein the cancer is gastrointestinal stromal sarcoma or bone sarcoma.

5. ET743 for use in the treatment of the human body for cancer according to any preceding claim, wherein the ET743 is administered in cycles at intervals of 1 to 6 weeks.

45

6. ET743 for use in the treatment of the human body for cancer according to claim 5, wherein the ET743 is administered during the first week of each cycle.

50

7. ET743 for use in the treatment of the human body for cancer according to claim 6, wherein the ET743 is administered each of the first days of each cycle.

8. ET743 for use in the treatment of the human body for cancer according to any of claims 6 to 7, wherein the patients are allowed to recover for the remainder of the cycle.

55

9. ET743 for use in the treatment of the human body for cancer according to any of claims 5 to 8, wherein the cycle

is 3 weeks.

10. ET743 for use in the treatment of the human body for cancer according to any of claims 5 to 8, wherein the cycle is 4 weeks.

5

11. ET743 for use in the treatment of the human body for cancer according to any preceding claim, comprising administering a dose of 1500 micrograms per m² of body surface area by intravenous infusion over a period of 24 hours given in multiple cycles of 3 to 4 weeks each with a single administration of the drug on the first day of each cycle.

10 12. ET743 for use in the treatment of the human body for cancer according to any preceding claim, wherein the patient has advanced and/or metastatic cancer.

13. ET743 for use in the treatment of the human body for cancer according to any preceding claim, wherein the human has previously been treated for cancer with chemotherapy.

15 14. ET743 for use in the treatment of the human body for cancer according to any preceding claim, wherein the treatment includes combination therapy.

20 15. ET743 for use in the treatment of the human body for cancer according to claim 14, wherein the treatment includes administering another drug selected from:

- a) a drug with an antimetabolic effect;
- b) an antimetabolite drug;
- c) an alkylating agent or nitrogen mustard;
- 25 d) a drug which targets DNA;
- e) a drug which targets a topoisomerase;
- f) a hormone or a hormone agonist or antagonist;
- g) a drug which targets signal transduction in tumour cells;
- h) an alkylating drug;
- 30 i) a drug potentially affecting metastasis of tumours;
- j) a gene therapy or antisense agents;
- k) an antibody therapeutic;
- l) another bioactive compound of marine origin;
- m) a steroid analogue;
- 35 n) an anti-inflammatory drug; or
- o) an anti-emetic drug.

40 16. ET743 for use in the treatment of the human body for cancer according to claim 15, wherein the other drug is dexamethasone.

Patentansprüche

45 1. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers, umfassend verabreichen von ET-743 durch intravenöse Infusion mit einer Dosierung von 1500 Mikrogramm pro m² Körperoberfläche über einen Zeitraum von 24 Stunden, wobei der Krebs Sarkom ist, was zu klinischer Besserung führt.

50 2. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach Anspruch 1, wobei der Krebs Weichteilsarkom ist.

3. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach Anspruch 1, wobei der Krebs Liposarkom, Leiomyosarkom oder Synovialissarkom ist.

55 4. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach Anspruch 1, wobei der Krebs Magendarm-Stromasarkom oder Knochensarkom ist.

5. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach einem vorhergehenden Anspruch, wobei das ET-743 in Zyklen mit Intervallen von 1 bis 6 Wochen verabreicht wird.

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6. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach Anspruch 5, wobei das ET-743 während der ersten Woche jedes Zyklus verabreicht wird.
- 5 7. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach Anspruch 6, wobei das ET-743 an jedem der ersten Tage jedes Zyklus verabreicht wird.
8. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach einem der Ansprüche 6 bis 7, wobei den Patienten erlaubt wird, sich für den Rest des Zyklus zu erholen.
- 10 9. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach einem der Ansprüche 5 bis 8, wobei der Zyklus 3 Wochen dauert.
10. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach einem der Ansprüche 5 bis 8, wobei der Zyklus 4 Wochen dauert.
- 15 11. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach einem vorhergehenden Anspruch, umfassend Verabreichen einer Dosis von 1500 Mikrogramm pro m² Körperoberfläche durch intravenöse Infusion über einen Zeitraum von 24 Stunden, gegeben in mehrfachen Zyklen von jeweils 3 bis 4 Wochen mit einer einzigen Verabreichung des Arzneimittels am ersten Tag jedes Zyklus.
- 20 12. ET-743 zur Verwendung bei der Behandlung von Krebs des menschliche Körpers nach einem vorhergehenden Anspruch, wobei der Patient fortgeschrittenen und/oder metastatischen Krebs hat.
- 25 13. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach einem vorhergehenden Anspruch, wobei der Mensch zuvor einer Krebsbehandlung mit Chemotherapie unterzogen wurde.
14. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach einem vorhergehenden Anspruch, wobei die Behandlung Kombinationstherapie einschließt.
- 30 15. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach Anspruch 14, wobei die Behandlung verabreichen eines anderen Arzneimittels, ausgewählt aus:
- a) einem Arzneimittel mit einer antimetabolischen Wirkung;
 - b) einem Antimetabolit-Arzneimittel;
 - 35 c) einem Alkylierungsmittel oder Stickstoffsenfgas;
 - d) einem Arzneimittel, das auf DNA zielt;
 - e) einem Arzneimittel, das auf eine Topoisomerase zielt;
 - f) einem Hormon oder einem Hormonagonisten oder -antagonisten;
 - g) einem Arzneimittel, das auf Signalübertragung in Tumorzellen zielt,
 - 40 h) einem alkylierenden Arzneimittel;
 - i) einem Arzneimittel, das potentiell die Metastase von Tumoren beeinflusst;
 - j) einem Gentherapie- oder Antisense-Mittel;
 - k) einem Antikörper-Therapeutikum;
 - l) einer anderen bioaktiven Verbindung marinen Ursprungs;
 - 45 m) einem Steroidanalogen;
 - n) einem entzündungshemmenden Arzneimittel; oder
 - o) einem antiemetischen Arzneimittel einschließt.
- 50 16. ET-743 zur Verwendung bei der Behandlung von Krebs des menschlichen Körpers nach Anspruch 15, wobei das andere Arzneimittel Dexamethason ist.

Revendications

- 55 1. ET743 pour une utilisation dans le traitement du corps humain pour un cancer, comprenant l'administration d'ET743 par perfusion intraveineuse à une dose de 1500 microgrammes par m² d'aire de surface corporelle, sur une période de 24 heures, où le cancer est un sarcome, conduisant à une amélioration clinique.

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2. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon la revendication 1, où le cancer est un sarcome des tissus mous.
- 5 3. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon la revendication 1, où le cancer est un liposarcome, un léiomyosarcome ou un sarcome synovial.
4. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon la revendication 1, où le cancer est un sarcome stromal gastro-intestinal ou un sarcome osseux.
- 10 5. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon l'une quelconque des revendications précédentes, où l'ET743 est administré en cycles à des intervalles de 1 à 6 semaines.
6. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon la revendication 5, où l'ET743 est administré durant la première semaine de chaque cycle.
- 15 7. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon la revendication 6, où l'ET743 est administré chacun des premiers jours de chaque cycle.
8. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon l'une quelconque des revendications 6 à 7, où on laisse les patients se rétablir pendant le reste du cycle.
- 20 9. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon l'une quelconque des revendications 5 à 8, où le cycle est de 3 semaines.
- 25 10. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon l'une quelconque des revendications 5 à 8, où le cycle est de 4 semaines.
- 30 11. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon l'une quelconque des revendications précédentes, comprenant l'administration d'une dose de 1500 microgrammes par m² d'aire de surface corporelle par perfusion intraveineuse sur une période de 24 heures donnée en cycles multiples de 3 à 4 semaines chacun avec une seule administration du médicament le premier jour de chaque cycle.
- 35 12. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon l'une quelconque des revendications précédentes, où le patient présente un cancer avancé et/ou métastatique.
13. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon l'une quelconque des revendications précédentes, où l'humain a été précédemment traité pour un cancer par chimiothérapie.
- 40 14. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon l'une quelconque des revendications précédentes, où le traitement inclut une thérapie de combinaison.
- 45 15. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon la revendication 14, où le traitement inclut l'administration d'un autre médicament choisi parmi:
 - a) un médicament avec un effet antimétabolite;
 - b) un médicament antimétabolite;
 - c) un agent alkylant ou de la moutarde azotée;
 - d) un médicament qui cible l'ADN;
 - e) un médicament qui cible une topo-isomérase;
 - 50 f) une hormone ou un agoniste ou antagoniste hormonal;
 - g) un médicament qui cible la transduction du signal dans les cellules tumorales;
 - h) un médicament alkylant;
 - i) un médicament qui affecte potentiellement la métastase des tumeurs;
 - j) une thérapie génique ou des agents anti-sens;
 - 55 k) une thérapie à base d'anticorps;
 - l) un autre composé bioactif d'origine marine;
 - m) un analogue stéroïde;
 - n) un médicament anti-inflammatoire; ou

o) un médicament anti-émétique.

16. ET743 pour une utilisation dans le traitement du corps humain pour un cancer selon la revendication 15, où l'autre médicament est la dexaméthasone.

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Sched.	Pts	Dose	RD*	Cycles	Tumor Type	Previous Chem. Lines	Response	Time to progression (months)
1h	40	585	1000	10	Melanoma	-	pCR	29+
3h	32	1500	1650	10	Leiomyosarcoma	1	CR	12
		1650		13+	Colon Stromal Sarcoma	1	PR	10+
		1650		5+	Gastric Stromal Sarcoma	1	MR	4+
24h	52	1500	1500	5	Osteosarcoma	4	PR	2
		1500		12	Liposarcoma	2	PR	15+
		1800		3	Breast	2	PR	3
dx5	42	325x5	1625	6	Leiomyosarcoma	1	MR (27%)	4
		325x5		7	Ovarian	7	MR+fail CA	6
72h	21	1200	1050	8	Mesothelioma	1	125 MR (41%)	5
		1200		4	Ocular Melanoma	-	Mixed R	2
Total								
Pts 187								

REFERENCES CITED IN THE DESCRIPTION

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