



(51) International Patent Classification:

A61K 31/485 (2006.01) A61K 31/555 (2006.01)  
A61K 31/135 (2006.01) A61P 25/04 (2006.01)  
A61K 31/137 (2006.01) A61P 25/00 (2006.01)

(21) International Application Number:

PCT/US2010/037182

(22) International Filing Date:

3 June 2010 (03.06.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/184,067 4 June 2009 (04.06.2009) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

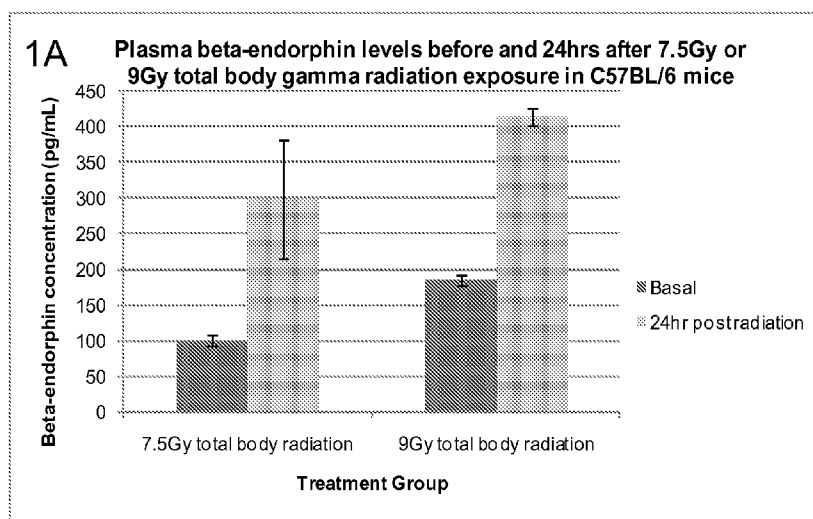
Published:

— with international search report (Art. 21(3))

[Continued on next page]

(54) Title: MODULATING ENDOGENOUS BETA-ENDORPHIN LEVELS

FIGURES 1A



(57) Abstract: Systemic beta-endorphin can be elevated in response to cutaneous irradiation, including ultraviolet and ionizing radiation. Increases in systemic beta-endorphin levels associated with cutaneous irradiation can be modulated with opiate receptor antagonists, particularly compounds that antagonize opioid receptor binding by beta endorphin.

WO 2010/141666 A3



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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

**(88) Date of publication of the international search report:**  
28 April 2011

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2010/037182****A. CLASSIFICATION OF SUBJECT MATTER***A61K 31/485(2006.01)i, A61K 31/135(2006.01)i, A61K 31/137(2006.01)i, A61K 31/555(2006.01)i, A61P 25/04(2006.01)i, A61P 25/00(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

A61K 31/485; A61K 31/135; A61K 31/137; A61K 31/555; A61P 25/04; A61P 25/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal), NCBI (PubMed, MeSH)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WARRICK J. INDER, et al., `Normal opioid tone and hypothalamic-pituitary-adrenal axis function in chronic fatigue syndrome despite marked functional impairment`, Clinical endocrinology, 2005, Vol. 62, No. 3, pp. 343-348, ISSN: 1365-2265 See the whole document	1-15
A	T. GAMBICHLER, et al., `Plasma levels of opioid peptides after sunbed exposures`, British Journal of Dermatology, 2002, Vol. 147, No. 6, pp. 1207-1211, ISSN: 1365-2133 See the whole document	1-15
A	US 5013739 A1 (BIHARI; BERNARD et al.) 07 May 1991 See the whole document	1-15

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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Date of the actual completion of the international search

15 FEBRUARY 2011 (15.02.2011)

Date of mailing of the international search report

**21 FEBRUARY 2011 (21.02.2011)**

Name and mailing address of the ISA/KR

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/037182**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5013739 A1	07.05.1991	US 4888346 A1 US 5356900 A1 US 6586443 B1	19.12.1989 18.10.1994 01.07.2003