

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
9 April 2009 (09.04.2009)

(10) International Publication Number
WO 2009/043505 A3

(51) International Patent Classification:

A61K 38/17 (2006.01) *A61P 11/00* (2006.01)
A61K 38/34 (2006.01) *A61P 25/28* (2006.01)
A61P 31/18 (2006.01) *A61P 31/00* (2006.01)
A61P 3/00 (2006.01) *A61P 35/00* (2006.01)
A61P 9/00 (2006.01) *A61P 37/00* (2006.01)

(21) International Application Number:

PCT/EP2008/008036

(22) International Filing Date:

9 September 2008 (09.09.2008)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

07017755.5 11 September 2007 (11.09.2007) EP

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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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

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

— 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:

29 October 2009

(54) Title: USE OF BETA-MELANOTROPIN AS A THERAPEUTIC AGENT, EG FOR THE TREATMENT OF AIDS OR ALZHEIMER

(57) Abstract: The present invention is directed to the use of the peptide compound Ala-Glu-Lys-Lys-Asp-Glu-Gly-Pro-Tyr-Arg-Met-Glu-His-Phe-Arg-Trp-Gly-Ser-Pro-Pro-Lys-Asp-OH as a therapeutic agent for the prophylaxis and/or treatment of cancer, autoimmune diseases, fibrotic diseases, inflammatory diseases, neurodegenerative diseases, infectious diseases, lung diseases, heart and vascular diseases and metabolic diseases. Moreover the present invention relates to pharmaceutical compositions preferably in form of a lyophilisate or liquid buffer solution or artificial mother milk formulation or mother milk substitute containing the peptide Ala-Glu-Lys-Lys-Asp-Glu-Gly-Pro-Tyr-Arg-Met-Glu-His-Phe-Arg-Trp-Gly-Ser-Pro-Pro-Lys-Asp-OH optionally together with at least one pharmaceutically acceptable carrier, cryoprotectant, lyoprotectant, excipient and/or diluent.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2008/008036

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61K38/17 A61K38/34 A61P31/18 A61P3/00 A61P9/00
A61P11/00 A61P25/28 A61P31/00 A61P35/00 A61P37/00

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 A61P

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 practical, search terms used)

EPO-Internal, WPI Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/05263 A (WILLIAM HARVEY RESEARCH LIMITE [GB]; PERRETTI MAURO [US]; GETTING STEP) 3 February 2000 (2000-02-03) the whole document	1-4,6,8, 10-12
X	GETTING S J ET AL: "POMC gene-derived peptides activate melanocortin type 3 receptor on murine macrophages, suppress cytokine release, and inhibit neutrophil migration in acute experimental inflammation." JOURNAL OF IMMUNOLOGY (BALTIMORE, MD. : 1950) 15 JUN 1999, vol. 162, no. 12, 15 June 1999 (1999-06-15), pages 7446-7453, XP002539995 ISSN: 0022-1767 the whole document	1,2,4,6, 8,10,11

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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Date of the actual completion of the international search

4 August 2009

Date of mailing of the international search report

01/09/2009

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2008/008036

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 102 09 072 A1 (UNIVERSITAETSKLINIKUM CHARITE [DE]) 18 September 2003 (2003-09-18) the whole document	1,2,4,6, 8,10,11
X	EP 1 529 535 A (IPF PHARMACEUTICALS GMBH [DE]) 11 May 2005 (2005-05-11) the whole document	1,2,4,6, 8,10,11
X	WO 2006/060873 A (PRINCE HENRYS INST MED RES [AU]; CLARKE IAIN J [AU]; ANTONATOS GEORGE) 15 June 2006 (2006-06-15) the whole document	1-4,6,8, 10-12
X	WO 02/067996 A (MOLOGEN FORSCHUNGS ENTWICKLUNG [DE]; WITTIG BURGHARDT [DE]; STEIN CHRI) 6 September 2002 (2002-09-06) the whole document	1,2,4,6, 8,10,11
X	WO 2007/027910 A (THE FEINSTEIN INST MEDICAL RES [US]; ROTH JESSE [US]) 8 March 2007 (2007-03-08) the whole document	1-4,6,8, 10-12
A	GETTING ET AL: "Targeting melanocortin receptors as potential novel therapeutics" PHARMACOLOGY AND THERAPEUTICS, ELSEVIER, GB, vol. 111, no. 1, 1 July 2006 (2006-07-01), pages 1-15, XP025038480 ISSN: 0163-7258 [retrieved on 2006-07-01] the whole document	1-12
A	CATANIA A ET AL: "Targeting Melanocortin Receptors as a Novel Strategy to Control Inflammation" PHARMACOLOGICAL REVIEWS, WILLIAMS AND WILKINS INC., BALTIMORE, MD, US, vol. 56, no. 1, 1 March 2004 (2004-03-01), pages 1-29, XP003004425 ISSN: 0031-6997 the whole document	1-12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2008/008036

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0005263	A	03-02-2000	AU 5056099 A	14-02-2000
DE 10209072	A1	18-09-2003	NONE	
EP 1529535	A	11-05-2005	NONE	
WO 2006060873	A	15-06-2006	NONE	
WO 02067996	A	06-09-2002	AT 282426 T	15-12-2004
			DE 10290663 D2	15-04-2004
			EP 1363658 A2	26-11-2003
			US 2004138115 A1	15-07-2004
WO 2007027910	A	08-03-2007	AU 2006284716 A1	08-03-2007
			CA 2620577 A1	08-03-2007
			EP 1940443 A2	09-07-2008
			JP 2009506773 T	19-02-2009