



- | | |
|---|--|
| <p>(51) International Patent Classification:
 <i>A61K 38/07</i> (2006.01) <i>A61P 25/00</i> (2006.01)
 <i>C07K 5/10</i> (2006.01)</p> <p>(21) International Application Number:
 PCT/US2013/044302</p> <p>(22) International Filing Date:
 5 June 2013 (05.06.2013)</p> <p>(25) Filing Language: English</p> <p>(26) Publication Language: English</p> <p>(30) Priority Data:
 61/655,731 5 June 2012 (05.06.2012) US</p> <p>(71) Applicant: CARA THERAPEUTICS, INC. [US/US];
 One Parrott Drive, Shelton, CT 06484 (US).</p> <p>(72) Inventors: CHALMERS, Derek, T.; 34 Spruce Street,
 Riverside, CT 06878 (US). JONES, James, B.; 32 Graham
 Avenue, Metuchen, NJ 08840 (US). SPENCER, Robert,
 H.; 6908 Upper York Road, New Hope, PA 18938 (US).</p> <p>(74) Agent: ANILIONIS, Algis; F. Chau & Associates, LLC,
 130 Woodbury Road, Woodbury, NY 11797 (US).</p> | <p>(81) Designated States (<i>unless otherwise indicated, for every kind of national protection available</i>): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, 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, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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.</p> <p>(84) Designated States (<i>unless otherwise indicated, for every kind of regional protection available</i>): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).</p> <p>Declarations under Rule 4.17:
 — <i>of inventorship (Rule 4.17(iv))</i></p> |
|---|--|

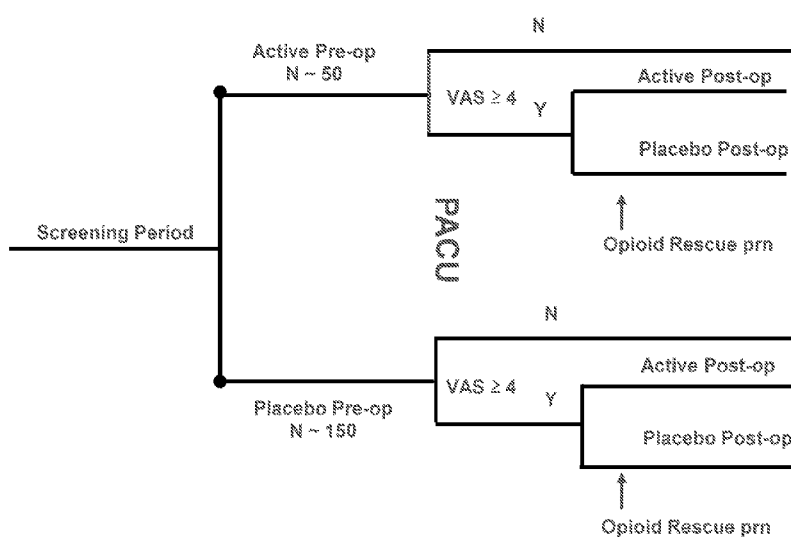
Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

[Continued on next page]

- (54) Title:** PERIPHERAL KAPPA RECEPTOR AGONISTS FOR REDUCING PAIN AND INFLAMMATION

Fig. 1



- (57) Abstract:** A method of treating of a mammalian subject suffering from an inflammatory disease or condition by administering a peripherally-restricted kappa opioid receptor agonist for reducing the inflammation is provided. The peripherally-restricted kappa opioid receptor agonist can include a peptide and the peptide can include D-amino acids. Administration of peripherally- restricted kappa opioid receptor agonists results in lowering of serum levels of pro-inflammatory cytokines and elevation of levels of anti-inflammatory cytokines.

WO 2013/184794 A3



Published:

(88) Date of publication of the international search report:

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

30 January 2014

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 2013/044302

A. CLASSIFICATION OF SUBJECT MATTER		<i>A61K 38/07 (2006.01)</i> <i>C07K 5/10 (2006.01)</i> <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 38/07, C07K 5/10, 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)																							
PCT Online, USPTO DB, Esp@cenet, DWPI, CIPO (Canada PO), SIPO, AIPN, DEPATISnet, NCBI (PubMed), VINITI.RU, SCSML.FSSI.RU																							
C. DOCUMENTS CONSIDERED TO BE RELEVANT																							
Category*	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.																				
X	US 2010/0075910 A1 (CARA THERAPEUTICS, INC.) 25.03.2010, abstract, paragraphs [0013] - [0026], [0035] - [0037], [0040], [0041], [0112], [0175], [0205], [0217], [0219], [0229], [0240], [0241], [0248], [0249], [0251], [0437]		1, 5-20																				
X	US 2011/0212882 A1 (CARA THERAPEUTICS, INC.) 01.09.2011, abstract, claims, paragraph [0126]		1-10																				
A	NEGUS S.S. et al. "Effects of peripherally restricted k opioid receptor agonists on pain-related stimulation and depression of behavior in rats. J. Pharmacol. Exp. Ther., 2012 Mar; 340(3):pp. 501-509 (abstract) [online] [retrieved 2013-10-09] Retrieved from PubMed, PMID:22128346		1-20																				
☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.																							
* Special categories of cited documents: <table border="0"> <tr> <td>"A"</td> <td>document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T"</td> <td>later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E"</td> <td>earlier document but published on or after the international filing date</td> <td>"X"</td> <td>document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L"</td> <td>document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y"</td> <td>document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O"</td> <td>document referring to an oral disclosure, use, exhibition or other means</td> <td>"&"</td> <td>document member of the same patent family</td> </tr> <tr> <td>"P"</td> <td>document published prior to the international filing date but later than the priority date claimed</td> <td></td> <td></td> </tr> </table>				"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E"	earlier document but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family	"P"	document published prior to the international filing date but later than the priority date claimed		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention																				
"E"	earlier document but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone																				
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art																				
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family																				
"P"	document published prior to the international filing date but later than the priority date claimed																						
Date of the actual completion of the international search		Date of mailing of the international search report																					
11 October 2013 (11.10.2013)		14 November 2013 (14.11.2013)																					
Name and mailing address of the ISA/ FIPS Russia, 123995, Moscow, G-59, GSP-5, Berezhkovskaya nab., 30-1		Authorized officer N. Tereschuk																					
Facsimile No. +7 (499) 243-33-37		Telephone No. (495)531-64-81																					