#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization

International Bureau

# 

# (10) International Publication Number WO 2010/048064 A3

#### (43) International Publication Date 29 April 2010 (29.04.2010)

(51) International Patent Classification: A61K 31/16 (2006.01) A61K 9/70 (2006.01) A61P 23/02 (2006.01)

(21) International Application Number:

PCT/US2009/061114

(22) International Filing Date:

18 October 2009 (18.10.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

20 October 2008 (20.10.2008) 61/136,984

US

- (71) Applicant (for all designated States except US): THE BRIGHAM AND WOMEN'S HOSPITAL, INC. [US/ US]; 75 Francis Street, Boston, MA 02115 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): KISSIN, Igor [US/US]; 27 Broadlawn Drive, Newton, MA 02467 (US).
- Agent: SANZO, Michael, A.; Law Office of Michael A. Sanzo, LLC, 15400 Calhoun Drive, Suite 125, Rockville, MD 20855 (US).

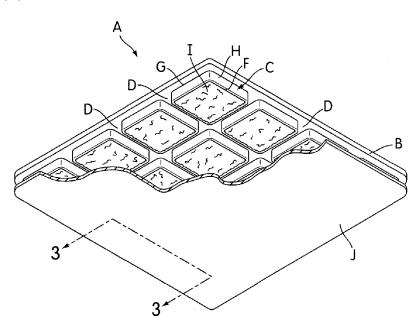
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, 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, 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, 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: DRUG DELIVERY SYSTEM AND ITS USE IN THE TREATMENT OF POSTHERPETIC NEURALGIA



to the skin of patients. It is also directed to a method of treating patients for shingles or postherpetic neuralgia by using the device to occlusively apply topical anesthetic to skin areas without the need for adhesives that attach occlusive dressing to the patient skin. In addition, the invention includes a method for determining the dosing interval for administering topical anesthetic to patients with PHN in procedures involving the complete numbing of skin.

(57) Abstract: The present invention is directed to a drug delivery composition that can be used to topically apply drugs

FIG. 1



- 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: 8 July 2010

International application No. PCT/US2009/061114

#### CLASSIFICATION OF SUBJECT MATTER A.

#### A61K 9/70(2006.01)i, A61P 23/02(2006.01)i, A61K 31/16(2006.01)i

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

#### FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC above

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, Pubmed

\* Key words: patch, cell, reservior, multiple, transdermal, lidocaine, NSAIDs, adhesive

#### **DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
A	US 6756052 B1 (LTS LOHMANN THERAPIE-SYSTEME AG) 29 June 2004 See Fig. 3, lines 32-43 in column 3, lines 24-38 in column 8, claims 1-4, 9.	1 - 15	
A	WO 2007/065427 A1 (FERTIN PHARMA) 14 June 2007 See abstreact, lines 19-24 in page 20, page 22, and claims 53-57, 68.	1 - 15	
A	US 5891077 A (HOLLISTER INCORPORATED) 06 April 1999 See the whole document.	1 - 15	
A	US 4784857 A (SMITH AND NEPHEW ASSOCIATED COMPANIES PLC) 15 November 1988 See the whole document.	1 - 15	
A	US 5629014 A (BERTEK, INC.) 13 May 1997 See the whole document.	1 - 15	
A	US 5538736 A (LTS LOHMANN THERAPIE-SYSTEME GMBH) 23 July 1996 See the whole document.	1 - 15	

	Further documents are listed in the continuation of Box 0	See patent family annex.	
* "A"	Special categories of cited documents: document defining the general state of the art which is not conside to be of particular relevance	······	
"E"	earlier application or patent but published on or after the internati filing date	the principle or theory underlying the invention  al "X" document of particular relevance; the claimed invention cannot b  considered novel or cannot be considered to involve an inventive	
"L"	document which may throw doubts on priority claim(s) or which cited to establish the publication date of citation or other	"Y" document of particular relevance; the claimed invention cannot b	)e
"O"	special reason (as specified) document referring to an oral disclosure, use, exhibition or other means	considered to involve an inventive step when the document is combined with one or more other such documents, such combinati being obvious to a person skilled in the art	ion
"P"	document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family	

l	Date of the actual completion of the international search	Date of mailing of the international search report
	29 APRIL 2010 (29.04.2010)	04 MAY 2010 (04.05.2010)
ſ	Name and mailing address of the ISA/KR	Authorized officer

Name and mailing address of the ISA/KR



Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seogu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

LEE, SUN HWA

Telephone No. 82-42-481-5606



### INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2009/061114

Box No. II	Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)
This internat	ional search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
bec C Ir	ims Nos.: 16 - 21 rause they relate to subject matter not required to be searched by this Authority, namely: laims 16-21are directed to a treatment method of the human body by therapy and thus relate to a subject matter which this atternational Searching Authority is not required to search under Article 17(2)(a)(i) of the PCT and Rule 39.1(v) of the egulations under the PCT.
└ bec	nims Nos.: reause they relate to parts of the international application that do not comply with the prescribed requirements to such an ent that no meaningful international search can be carried out, specifically:
	nims Nos.: cause they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box No. III	Observations where unity of invention is lacking (Continuation of item 3 of first sheet)
This Internat	tional Searching Authority found multiple inventions in this international application, as follows:
clai	all required additional search fees were timely paid by the applicant, this international search report covers all searchable ims.  all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment
	any additional fee.
	only some of the required additional search fees were timely paid by the applicant, this international search report covers y those claims for which fees were paid, specifically claims Nos.:
	required additional search fees were timely paid by the applicant. Consequently, this international search report is tricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Remark on	Protest  The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.  The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.  No protest accompanied the payment of additional search fees.

### INTERNATIONAL SEARCH REPORT

International application No.

# PCT/US2009/061114

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
А	JP 2001-57991 A (YUUTOKU YAKUHIN KOGYO KK) 06 March 2001 See the whole document.	1 - 15	
A	JP 07-250864 A (TAC MEDICAL KK) 03 October 1995 See the whole document.	1 - 15	

### INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

# PCT/US2009/061114

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 06756052 B1	29.06.2004	AT 264672 T AU 4923500 A DE 19923427 A1 DK 1178783 T3 EP 1178783 B1 EP 1178783 B1 ES 2220462 T3 JP 2003-500349 A KR 10-0636460 B1 US 2004-0208918 A1 WO 2000-071100 A1	15.05.2004 12.12.2000 23.11.2000 12.07.2004 13.02.2002 21.04.2004 07.01.2003 18.10.2006 21.10.2004 30.11.2000
WO 2007-065427 A1	14.06.2007	EP 1965777 A1 JP 2009-519246 T	10.09.2008 14.05.2009
US 05891077 A	06.04.1999	EP 0870488 B1 EP 0870488 A3 EP 0870488 A2 EP 0864311 B1 EP 0864311 A3 EP 0864311 A2 JP 3249084 B2 JP 10-263006 A JP 3249460 B2 JP 10-263007 A US 05902260 A	13. 10. 2004 31. 01. 2001 14. 10. 1998 13. 10. 2004 31. 01. 2001 16. 09. 1998 21. 01. 2002 06. 10. 1998 21. 01. 2002 06. 10. 1998 11. 05. 1999
US 04784857 A	15.11.1988	None	
US 05629014 A	13.05.1997	EP 0655900 A1 EP 0655900 A4 EP 0655900 A1 EP 0655900 B1 US 05503844 A WO 1994-026218 A1	07.06.1995 12.06.1996 24.11.1999 15.03.2000 02.04.1996 24.11.1994
US 05538736 A	23.07.1996	EP 0288734 A1 EP 0288734 B1 JP 2683264 B2 JP 01503383 B2 KR 10-1991-0002250 B1 W0 1988-008318 A1	02.11.1988 04.12.1991 26.11.1997 16.11.1989 08.04.1991 03.11.1988
JP 2001-057991 A	06.03.2001	None	
JP 7250864 A	 03 . 10 . 1995	None	