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(54) Title: COMPOSITION FOR TREATING OCULAR DISORDERS SUCH AS MACULAR DEGENERATION, RETINOPATHY AND GLAUCOMA

(57) Abstract: An aqueous ophthalmic composition for treating ocular disorders, such as macular degeneration and retinopathy, includes Timolol Maleate at a concentration of about 0.1 % to 0.5%, Dorzolamide at a concentration of about 0.5% to 2.5%, Prednisolone Sodium Phosphate at a concentration of about 1.0% to 3.0%, Ketorolac Tromethamine at a concentration of about 0.4% to 1.2%, and sterile water at a concentration of at least about 90.0%.



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A. CLASSIFICATION OF SUBJECT MATTER

A61K 9/00(2006.01)i, A61K 9/08(2006.01)i, A61K 31/5377(2006.01)i, A61K 31/382(2006.01)i, A61K 31/573(2006.01)i, A61K 31/407(2006.01)i, A61K 31/20(2006.01)i, A61K 45/06(2006.01)i, A61P 27/02(2006.01)i, A23L 33/10(2016.01)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 9/00; A61K 31/141; A61K 31/355; A61K 31/382; A61K 31/5375; A61K 31/5377; A61K 31/56; A61K 38/13; A61K 38/20; A61K 9/08; A61K 31/573; A61K 31/407; A61K 31/20; A61K 45/06; A61P 27/02; A23L 33/10

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: timolol maleate, dorzolamide, prednisolone sodium phosphate, ketorolac tromethamine, ocular disorder, treatment

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009-0136445 A1 (WONG, VERNON G. et al.) 28 May 2009 See paragraphs [0003], [0004], [0007], [0027]-[0031], [0040], [0042], [0049]-[0052], [0059], [0085]-[0088], [0094]; and claims 4, 8.	1-24
A	US 2013-0345185 A1 (LUX BIOSCIENCES, INC.) 26 December 2013 See the whole document.	1-24
A	WO 2012-074237 A2 (HANLIM PHARMACEUTICAL CO., LTD.) 07 June 2012 See the whole document.	1-24
A	US 7320976 B2 (CHANG, CHIN-MING et al.) 22 January 2008 See the whole document.	1-24
A	WO 2017-159586 A1 (SANTEN PHARMACEUTICAL CO., LTD.) 21 September 2017 See the whole document.	1-24



Further documents are listed in the continuation of Box C.



See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

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"&" document member of the same patent family

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009-0136445 A1	28/05/2009	AU 2005-292145 A1	13/04/2006
		AU 2005-292145 B2	17/02/2011
		AU 2005-292145 C1	21/07/2011
		AU 2011-202288 A1	09/06/2011
		AU 2011-202288 B2	19/09/2013
		BR PI0516830 A	23/09/2008
		CA 2582096 A1	13/04/2006
		CA 2582096 C	07/01/2014
		CN 101060831 A	24/10/2007
		CN 101060831 B	23/06/2010
		CN 101890167 A	24/11/2010
		CN 101890167 B	01/03/2017
		EP 1793803 A2	13/06/2007
		EP 1793803 A4	23/09/2009
		EP 1793803 B1	07/11/2012
		EP 2452670 A1	16/05/2012
		EP 3173072 A1	31/05/2017
		HK 1107672 A1	26/04/2013
		JP 2008-514719 A	08/05/2008
		JP 2012-072196 A	12/04/2012
		JP 2014-156488 A	28/08/2014
		JP 2016-199596 A	01/12/2016
		JP 2018-090641 A	14/06/2018
		JP 2018-135400 A	30/08/2018
		JP 5682991 B2	11/03/2015
		JP 6342716 B2	13/06/2018
		KR 10-1341359 B1	13/12/2013
		KR 10-1506925 B1	30/03/2015
		KR 10-2007-0083901 A	24/08/2007
		KR 10-2013-0124415 A	13/11/2013
		MX 2007003968 A	04/03/2008
		MX 344532 B	19/12/2016
		NZ 554426 A	28/05/2010
		TW 200726472 A	16/07/2007
		TW 201238609 A	01/10/2012
		TW I379682 B	21/12/2012
		TW I439293 B	01/06/2014
		US 2006-0073182 A1	06/04/2006
		US 2008-0038316 A1	14/02/2008
		US 2011-0111006 A1	12/05/2011
		US 2013-0324481 A1	05/12/2013
		US 2015-0273066 A1	01/10/2015
		US 2016-0151496 A1	02/06/2016
		US 2018-0228898 A1	16/08/2018
		US 2018-0289810 A1	11/10/2018
		US 7906136 B2	15/03/2011
		US 8541413 B2	24/09/2013
		US 9011915 B2	21/04/2015
		US 9737606 B2	22/08/2017

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2018/058828

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2013-0345185 A1	26/12/2013	US 9993558 B2	12/06/2018
		WO 2006-039336 A2	13/04/2006
		WO 2006-039336 A3	06/07/2006
US 2013-0345185 A1	26/12/2013	AU 2008-310956 A1	16/04/2009
		AU 2008-310956 B2	07/08/2014
		CA 2701482 A1	16/04/2009
		CA 2701482 C	23/10/2018
		CA 3014633 A1	16/04/2009
		CN 101918019 A	15/12/2010
		CN 101918019 B	26/11/2014
		EP 2197461 A1	23/06/2010
		EP 2197461 A4	02/10/2013
		EP 2197461 B1	21/02/2018
		ES 2667945 T3	16/05/2018
		HK 1150771 A1	16/10/2015
		JP 2010-540682 A	24/12/2010
		JP 2015-086226 A	07/05/2015
		JP 5668476 B2	12/02/2015
		JP 5836473 B2	24/12/2015
		MX 2010003364 A	06/07/2010
		US 2009-0092665 A1	09/04/2009
		US 2011-0300195 A1	08/12/2011
		US 2015-0157687 A1	11/06/2015
		US 8435544 B2	07/05/2013
		US 8535694 B2	17/09/2013
		WO 2009-048929 A1	16/04/2009
WO 2012-074237 A2	07/06/2012	KR 10-1119610 B1	06/03/2012
		WO 2012-074237 A3	23/08/2012
US 7320976 B2	22/01/2008	AU 2003-228480 A1	03/11/2003
		AU 2003-228480 B2	27/07/2006
		BR 0302584 A	09/03/2004
		CA 2440764 A1	19/10/2003
		CA 2440764 C	25/10/2005
		CN 100558364 C	11/11/2009
		CN 101664414 A	10/03/2010
		CN 1516588 A	28/07/2004
		CY 1114048 T1	27/07/2016
		DK 1496912 T3	02/04/2013
		EP 1496912 A1	19/01/2005
		EP 1496912 B1	09/01/2013
		EP 1496912 B9	17/06/2015
		EP 2241319 A1	20/10/2010
		ES 2399045 T3	25/03/2013
		HK 1067549 A1	27/08/2010
		JP 2005-523316 A	04/08/2005
		KR 10-0723189 B1	29/05/2007
		KR 10-2004-0100844 A	02/12/2004

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2018/058828

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		MX PA03008401 A	16/03/2004
		NO 20044450 A	09/11/2004
		NO 326579 B1	12/01/2009
		NZ 528945 A	28/04/2006
		PT 1496912 E	13/02/2013
		SI 1496912 T1	29/03/2013
		TW 200402296 A	16/02/2004
		TW I351959 B	11/11/2011
		US 2003-0199507 A1	23/10/2003
		US 2003-0199509 A1	23/10/2003
		US 2004-0102445 A1	27/05/2004
		US 2008-0103153 A1	01/05/2008
		US 2008-0132512 A1	05/06/2008
		US 2012-0184551 A1	19/07/2012
		US 2013-0116255 A1	09/05/2013
		US 2013-0196995 A1	01/08/2013
		US 2013-0324534 A1	05/12/2013
		US 2015-0087647 A1	26/03/2015
		US 2016-0303119 A1	20/10/2016
		US 2017-0157138 A1	08/06/2017
		US 2018-0042932 A1	15/02/2018
		US 2018-0064720 A1	08/03/2018
		US 2018-0064721 A1	08/03/2018
		US 7030149 B2	18/04/2006
		US 7323463 B2	29/01/2008
		US 7642258 B2	05/01/2010
		US 8133890 B2	13/03/2012
		US 8354409 B2	15/01/2013
		US 8748425 B2	10/06/2014
		US 9474751 B1	25/10/2016
		US 9770453 B2	26/09/2017
		US 9907801 B1	06/03/2018
		US 9907802 B1	06/03/2018
		WO 03-088973 A1	30/10/2003
WO 2017-159586 A1	21/09/2017	JP 2017-165707 A	21/09/2017
		JP 2017-186372 A	12/10/2017
		JP 6178028 B1	21/07/2017
		TW 201733577 A	01/10/2017