

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference X20297	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2015/047415	International filing date (<i>day/month/year</i>) 28 August 2015 (28-08-2015)	(Earliest) Priority Date (<i>day/month/year</i>) 4 September 2014 (04-09-2014)
Applicant ELI LILLY AND COMPANY		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6**bis**(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. _____
☐ as suggested by the applicant
☐ as selected by this Authority, because the applicant failed to suggest a figure
☐ as selected by this Authority, because this figure better characterizes the invention
b. ☐ none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2015/047415

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07D401/14 A61K31/4439 A61P13/10
ADD.

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)

C07D 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 practicable, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	WO 2014/159012 A1 (LILLY CO ELI [US]) 2 October 2014 (2014-10-02) the whole document	1-9
A	----- EP 2 564 849 A1 (ASTELLAS PHARMA INC [JP]) 6 March 2013 (2013-03-06) examples	1-9
A	----- WO 01/47905 A1 (ICOS CORP [US]) 5 July 2001 (2001-07-05) cited in the application examples ----- -/-	1-9



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

"E" earlier application or patent but published on or after the international filing date

"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)

"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

"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

"&" document member of the same patent family

Date of the actual completion of the international search

22 October 2015

Date of mailing of the international search report

23/11/2015

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2015/047415

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	NICHOLS, P. J.; DEMATTEI, J. A; BARNETT, B. R.; LEFUR, N. A; CHUANG, T.; PISCOPIO, A. D.; KOCK, K.: "Preparation of pyrrolidine-based PDE4 inhibitors via enantioselective conjugate addition of alpha-substituted malonates to aromatic nitroalkenes", ORG. LETT., vol. 8, no. 7, 3 April 2006 (2006-04-03), pages 1495-1498, XP002747953, cited in the application the whole document -----	1-9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2015/047415

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2014159012	A1	02-10-2014	
		AU 2014241444 A1	06-08-2015
		CA 2899806 A1	02-10-2014
		TW 201522327 A	16-06-2015
		US 2014275002 A1	18-09-2014
		US 2015133423 A1	14-05-2015
		WO 2014159012 A1	02-10-2014

EP 2564849	A1	06-03-2013	
		AU 2011246111 A1	18-10-2012
		CA 2797420 A1	03-11-2011
		CN 102858340 A	02-01-2013
		EA 201291122 A1	30-04-2013
		EP 2564849 A1	06-03-2013
		KR 20130061684 A	11-06-2013
		TW 201206440 A	16-02-2012
		US 2013030006 A1	31-01-2013
		WO 2011136308 A1	03-11-2011

WO 0147905	A1	05-07-2001	
		AT 325108 T	15-06-2006
		AU 778543 B2	09-12-2004
		AU 2426201 A	09-07-2001
		BG 65892 B1	30-04-2010
		BR 0016693 A	11-03-2003
		CA 2395193 A1	05-07-2001
		CN 1434813 A	06-08-2003
		CZ 20022188 A3	12-03-2003
		EE 200200351 A	15-10-2003
		EP 1242400 A1	25-09-2002
		GE P20043384 B	10-05-2004
		HR P20020541 A2	31-08-2004
		HU 0301113 A2	28-08-2003
		IS 6436 A	19-06-2002
		JP 4294903 B2	15-07-2009
		JP 2003519135 A	17-06-2003
		MX PA02006212 A	26-02-2004
		NO 20023008 A	20-08-2002
		PL 355988 A1	31-05-2004
		SK 9172002 A3	06-11-2002
		TR 200400702 T4	21-06-2004
		UA 73964 C2	16-09-2002
		US 6258833 B1	10-07-2001
		US 6423710 B1	23-07-2002
		US 6458787 B1	01-10-2002
		US 2004023945 A1	05-02-2004
		US 2004152754 A1	05-08-2004
		US 2006074123 A1	06-04-2006
		WO 0147905 A1	05-07-2001
		YU 48002 A	28-11-2005
		ZA 200205551 A	11-07-2003
