



(51) International Patent Classification:

C07D 495/04 (2006.01) C07C 25/18 (2006.01)
C07C 49/567 (2006.01)

(21) International Application Number:

PCT/HU2014/000008

(22) International Filing Date:

24 January 2014 (24.01.2014)

(25) Filing Language:

Hungarian

(26) Publication Language:

English

(30) Priority Data:

P1300033 24 January 2013 (24.01.2013) HU

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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, 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, IR, 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, SA, 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.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): 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).

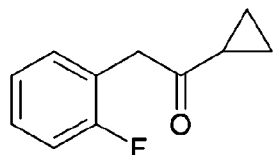
Published:

- 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))

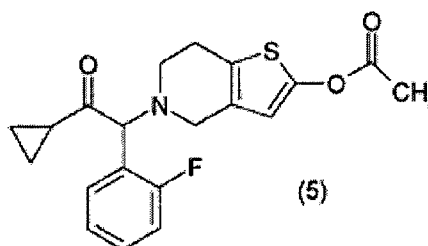
(88) Date of publication of the international search report:

18 September 2014

(54) Title: IMPROVED PROCESS FOR THE PREPARATION OF PRASUGREL AND INTERMEDIATE THEREOF



(1)



(5)

(57) Abstract: The invention relates to an industrial scale process for the preparation of 1-cyclopropyl-2-(2-fluorophenyl)ethanone of Formula (1) (Formula (1)) and the use of this compound for the preparation of 2-acetoxy-5-(2-fluoro-α-cyclopropylcarbonylbenzyl)-4,5,6,7-tetrahydro-4H-thieno[3,2-c]pyridine (prasugrel) of Formula (5). ((Formula (5))



INTERNATIONAL SEARCH REPORT

International application No
PCT/HU2014/000008

A. CLASSIFICATION OF SUBJECT MATTER
 INV. C07D495/04 C07C49/567 C07C25/18
 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 C07C

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, BEILSTEIN Data, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2009/068923 A2 (EGIS GYOGYSZERGYAR NYILVANOSAN [HU]; MEZEI TIBOR [HU]) 4 June 2009 (2009-06-04) cited in the application the whole document page 5, lines 3-8; examples 4, 5 -----	1-13
A	M SZWARC ET AL: "New Compounds. The Di-fluorobibenzyls", JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 70, no. 8, 1948, page 2831, XP055109979, ISSN: 0002-7863, DOI: 10.1021/ja01188a602 the whole document first compound of the table -----	1-13



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

27 March 2014

Date of mailing of the international search report

11/07/2014

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/HU2014/000008

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because 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 International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-13

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13

processes for preparing intermediate 1 and subsequent transformation thereof into drug 5

2. claim: 14

intermediate 1 with a certain purity

3. claim: 15

process for preparing impurity 6

4. claim: 16

use of impurity 6 as analytical standard

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/HU2014/000008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009068923	A2	04-06-2009	
		AT 513800 T	15-07-2011
		CN 101970391 A	09-02-2011
		EA 201000819 A1	29-10-2010
		EP 2231575 A2	29-09-2010
		ES 2368860 T3	23-11-2011
		PT 2231575 E	13-09-2011
		RS 52105 B	31-08-2012
		US 2010274020 A1	28-10-2010
		WO 2009068923 A2	04-06-2009
