

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
19 May 2011 (19.05.2011)

(10) International Publication Number
WO 2011/060069 A3

(51) International Patent Classification:
C12N 9/10 (2006.01) A61K 38/14 (2006.01)
C12N 15/54 (2006.01) C12Q 1/68 (2006.01)
C12P 21/02 (2006.01)

(72) Inventor; and
(75) Inventor/Applicant (for US only): MEADOR III, James, W. [US/US]; 38 Gryzboska Circle, Framingham, MA 01702 (US).

(21) International Application Number:
PCT/US2010/056230

(74) Agents: COLANTONIO, Jessica, R. et al.; Choate, Hall & Stewart LLP, Two International Place, Boston, MA 02110 (US).

(22) International Filing Date:
10 November 2010 (10.11.2010)

(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, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/260,232 11 November 2009 (11.11.2009) US

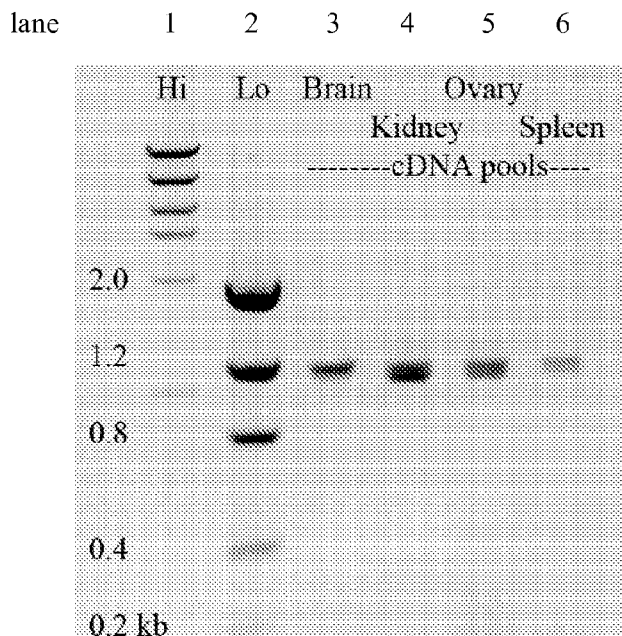
(71) Applicant (for all designated States except US): MOMENTA PHARMACEUTICALS, INC. [US/US]; 675 West Kendall Street, Cambridge, MA 02142 (US).

[Continued on next page]

(54) Title: GLYCOSYL TRANSFERASE FROM CHINESE HAMSTER AND RELATED METHODS

(57) Abstract: A glycosyl transferase from Chinese hamster and related methods are described.

FIGURE 1



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(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, 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))*
- *with sequence listing part of description (Rule 5.2(a))*

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

1 December 2011

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.: 10, 11, 22, 23
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:

Claims 10, 11, 22 and 23 are unclear, as they refer to the multiple dependent claims which are not drafted in accordance with the third sentence of Rule 6.4(a).

3. Claims Nos.: 8, 9, 12, 21, 26
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:

This ISA found 7 inventions in this application as follows:

- Group 1: claims 1, 2, 6, 8-26 (all partial) relate to SEQ ID NO: 2
 - Group 2: claims 1, 2, 6, 8-26 (all partial) relate to SEQ ID NO: 4
 - Group 3: claims 1, 2, 6, 8-26 (all partial) relate to SEQ ID NO: 7
 - Group 4: claims 3-5, 7-12, 17-20, 24, 26 (all partial) relate to SEQ ID NO: 1
 - Group 5: claims 3-5, 7-12, 17-20, 24, 26 (all partial) relate to SEQ ID NO: 3
 - Group 6: claims 3-5, 7-12, 17-20, 24, 26 (all partial) relate to SEQ ID NO: 5
 - Group 7: claims 3-5, 7-12, 17-20, 24, 26 (all partial) relate to SEQ ID NO: 6
- Inventions belonging to Groups 1-7 do not share a single general inventive concept linking the 7 Groups together within the meaning of PCT Rule 13.1.

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 fee, this Authority did not invite payment of any additional fee.

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.:
Claims 1, 2, 6, 8-26 (all partial) relate to SEQ ID NO:2.

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.

A. CLASSIFICATION OF SUBJECT MATTER*C12N 9/10(2006.01)i, C12N 15/54(2006.01)i, C12P 21/02(2006.01)i, A61K 38/14(2006.01)i, C12Q 1/68(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)

C12N 9/10; C07H 21/04; C12N 5/00; A01N 63/00; C12N 1/21; C12N 15/00

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: glycosyl transferase, chinese hamster, CHO cell, glycoprotein, Ggta1 expression

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GenBank Accession No. AAO49077: alpha-1,3-galactosyltransferase [Rattus norvegicus] (23 April 2003) See the whole document.	1, 2, 6, 13-20, 24, 25
A	TAYLOR, S. G. et al. Characterization of the rat α (1,3)galactosyltransferase: evidence for two independent genes encoding glycosyltransferases that synthesize Gala(1,3)Gal by two separate glycosylation pathways. Glycobiology. 2003. Vol. 13, No. 5, pp. 327-337 See the whole document.	1, 2, 6, 13-20, 24, 25
A	US 5,955,347 A (LOWE, J. B.) 21 September 1999 See the whole document.	1, 2, 6, 13-20, 24, 25
A	US 5,849,991 A (d'APICE, A. J. F. et al.) 15 December 1998 See the whole document.	1, 2, 6, 13-20, 24, 25
A	US 6,713,055 B2 (SCHIFF, J. M.) 30 March 2004 See the whole document.	1, 2, 6, 13-20, 24, 25

 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 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

26 SEPTEMBER 2011 (26.09.2011)

Date of mailing of the international search report

26 SEPTEMBER 2011 (26.09.2011)

Name and mailing address of the ISA/KR

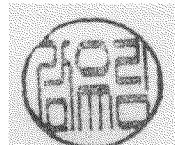
Korean Intellectual Property Office
Government Complex-Daejeon, 189 Cheongsa-ro,
Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Kam, Yoo Lim

Telephone No. 82-42-481-8741



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2010/056230

Patent document cited in search report	Publication date	Patent family member(s)	Publication date		
US 05955347A A	21.09.1999	CA 2140550 C	11.10.2005		
		EP 0515536 A1	02.12.1992		
		EP 0515536 A4	19.10.1994		
		EP 0515536 B1	19.01.2000		
		EP 0654082 A1	23.05.2001		
		EP 0654082 A1	24.05.1995		
		EP 0654082 A4	02.01.1997		
		JP 08-505041 A	04.06.1996		
		KR 10-0243494 B1	02.03.2000		
		US 05324663A A	28.06.1994		
		US 05595900A A	21.01.1997		
		US 2002-0102688 A1	01.08.2002		
		US 6268193 B1	31.07.2001		
		WO 91-12340 A1	22.08.1991		
		WO 94-02616 A1	03.02.1994		
		US 05849991A A	15.12.1998	AU 1998-77428 B2	07.10.1999
				AU 1998-77428 C	01.10.1998
AU 711144 C	13.04.2006				
CA 2181433 A1	03.08.1995				
CA 2181433 C	20.04.2010				
EP 0755451 A1	13.03.2002				
EP 0755451 B1	25.05.2005				
JP 09-508277 A	26.08.1997				
KR 10-1997-0700768 A	12.02.1997				
US 2004-0171155 A1	02.09.2004				
US 6849448 B1	01.02.2005				
US 7201899 B2	10.04.2007				
WO 95-20661 A1	03.08.1995				
US 6713055 B2	30.03.2004	US 2002-128221 A1	12.09.2002		