



- (51) International Patent Classification:
A61K 38/02 (2006.01)
- (21) International Application Number:
PCT/US2013/044552
- (22) International Filing Date:
6 June 2013 (06.06.2013)
- (25) Filing Language:
English
- (26) Publication Language:
English
- (30) Priority Data:
- | | | |
|------------|------------------------------|----|
| 61/657,264 | 8 June 2012 (08.06.2012) | US |
| 61/657,378 | 8 June 2012 (08.06.2012) | US |
| 61/657,285 | 8 June 2012 (08.06.2012) | US |
| 61/723,081 | 6 November 2012 (06.11.2012) | US |
| 61/778,575 | 13 March 2013 (13.03.2013) | US |
| 61/778,812 | 13 March 2013 (13.03.2013) | US |
- (71) Applicant: ALKERMES, INC. [US/US]; 852 Winter Street, Waltham, MA 02451 (US).
- (72) Inventors: ALVAREZ, Juan; 6 Wyndbrook Lane, Chelmsford, MA 01824 (US). CHAMOON, Jean; 109 Myrtle Street, Apt. 3, Waltham, MA 02453 (US). LOSEY, Heather, C.; 12 Taft Avenue, Lexington, MA 02421 (US).
- (74) Agents: ELMORE, Carolyn, S. et al.; Elmore Patent Law Group, P.C., 484 Groton Road, Westford, MA 01886 (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, 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, 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, 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))
- with sequence listing part of description (Rule 5.2(a))

[Continued on next page]

(54) Title: FUSION POLYPEPTIDES COMPRISING AN ACTIVE PROTEIN LINKED TO A MUCIN-DOMAIN POLYPEPTIDE

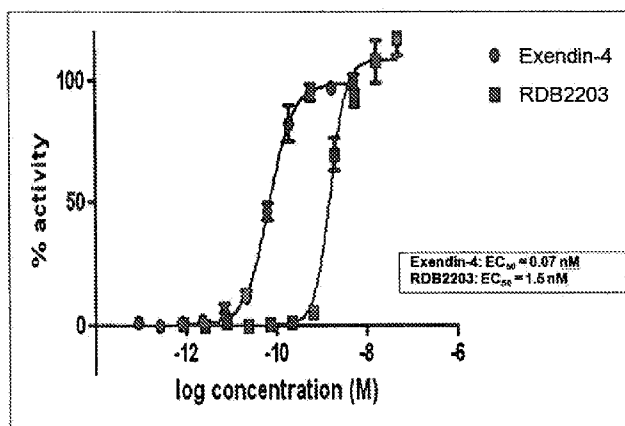


FIG. 20

(57) Abstract: The present invention provides fusion proteins comprising a mucin-domain polypeptide covalently linked to an active protein that has improved properties (e.g. pharmacokinetic and/or physicochemical properties) compared to the same active protein not linked to mucin-domain polypeptide, as well as methods for making and using the fusion proteins of the invention.

(88) Date of publication of the international search report:
30 January 2014

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2013/044552

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A61K 38/02 (2013.01) USPC - 514/1.1 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) IPC(8) - A61K 9/12, 38/02, 38/16, 38/17; A61P 1/02, 27/02; C07K 2/00 (2013.01) USPC - 424/45; 514/1.1, 5.1, 12.3 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched CPC - A61K 9/0031, 9/0048, 9/0095, 9/02, 31/00, 38/22, 38/1735, 45/06 (2013.01) Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PatBase, Google Patents, PubMed		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2008/0286211 A1 (BARKER) 20 November 2008 (20.11.2008) entire document	1-4, 8, 9, 13, 14, 17-19, 22-26 ----- 5-7, 10-12, 15, 16, 27
X -- Y	WO 2004/033651 A2 (DE FREES et al) 22 April 2004 (22.04.2004) entire document	20, 21 ----- 5, 27
Y	US 2004/0137580 A1 (HOLGERSSON et al) 15 July 2004 (15.07.2004) entire document	6
Y	US 2007/0105767 A1 (KHARBANDA et al) 10 May 2007 (10.05.2007) entire document	7, 15, 16
Y	US 2003/0073822 A1 (LOFLING et al) 17 April 2003 (17.04.2003) entire document	10
Y	US 2002/0159969 A1 (AGRAWAL et al) 31 October 2002 (31.10.2002) entire document	11, 12
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
* 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 13 November 2013		Date of mailing of the international search report 22 NOV 2013
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201		Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774