

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
19 September 2019 (19.09.2019)(10) International Publication Number
WO 2019/178191 A8

(51) International Patent Classification:

C07D 417/06 (2006.01) A61P 25/28 (2006.01)
C07D 417/14 (2006.01) A61K 31/427 (2006.01)
C07D 495/04 (2006.01) A61K 31/445 (2006.01)

(21) International Application Number:

PCT/US2019/021995

(22) International Filing Date:

13 March 2019 (13.03.2019)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/642,932 14 March 2018 (14.03.2018) US
62/690,536 27 June 2018 (27.06.2018) US
62/699,443 17 July 2018 (17.07.2018) US

(71) Applicant: **BIAGEN MA INC.** [US/US]; 225 Binney Street, Cambridge, MA 02142 (US).

(72) Inventors: **GENUNG, Nathan**; c/o Biogen Ma Inc., 225 Binney Street, Cambridge, MA 02142 (US). **GUCKIAN, Kevin M.**; c/o Biogen Ma Inc., 225 Binney Street, Cambridge, MA 02142 (US). **VESSELS, Jeffrey**; c/o Biogen Ma Inc., 225 Binney Street, Cambridge, MA 02142 (US). **ZHANG, Lei**; c/o Biogen Ma Inc., 225 Binney Street, Cambridge, MA 02142 (US). **GIANATASSIO, Ryan**; c/o Biogen Ma Inc., 225 Binney Street, Cambridge, MA 02142 (US). **LIN, Edward Yin Shiang**; c/o Biogen Ma Inc., 225 Binney Street, Cambridge, MA 02142 (US). **XIN, Zhili**; c/o Biogen Ma Inc., 225 Binney Street, Cambridge, MA 02142 (US).

(74) Agent: **DAVIS, Steven, G.** et al.; McCarter & English, LLP, 265 Franklin Street, Boston, MA 02110 (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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, ST, 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).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))

(48) Date of publication of this corrected version:

17 October 2019 (17.10.2019)

(15) Information about Correction:

see Notice of 17 October 2019 (17.10.2019)

(54) Title: O-GLYCOPROTEIN-2-ACETAMIDO-2-DEOXY-3-D-GLYCOPYRANOSIDASE INHIBITORS

(57) Abstract: Described herein are compounds represented by formula (I^a) or a pharmaceutically acceptable salt thereof, pharmaceutical compositions comprising the same and methods of preparing and using the same. The variables Ar, R^a, R^b, m, n, Y¹, Y², R³ and R⁴ are defined herein.