(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 September 2014 (12.09.2014)

WIPO | PCT

(10) International Publication Number
WO 2014/137903 A2

(51) International Patent Classification:
C07K 1/36 (2006.01)

(21) International Application Number:
PCT/US2014/019909

(22) International Filing Date:
3 March 2014 (03.03.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/775,060 8 March 2013 (08.03.2013) US
61/856,390 19 July 2013 (19.07.2013) US

(71) Applicant: **GENZYME CORPORATION** [US/US]; 500 Kendall Street, Cambridge, Massachusetts 02142 (US).

(72) Inventors: **KONSTANTINOV, Konstantin**; 521 Chestnut Street, Waban, Massachusetts 02468 (US). **GODAWAT, Rahul**; 270 Sewall Street, Boylston, Massachusetts 01505 (US). **WARIKOO, Veena**; 6 Hawthorne Ave., Westford, Massachusetts 01886 (US). **JAIN, Sujit**; 5 Colonial Village Dr., Apt. 4, Arlington, Massachusetts 02474 (US).

(74) Agents: **REITER, Tiffany** et al.; Fish & Richardson P.C., P.O. Box 1022, Minneapolis, Minnesota 55440-1022 (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, 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:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(54) Title: INTEGRATED CONTINUOUS MANUFACTURING OF THERAPEUTIC PROTEIN DRUG SUBSTANCES

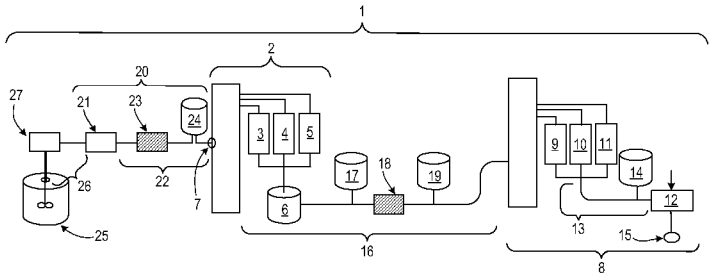


FIG. 1

(57) Abstract: Provided herein are integrated continuous biomanufacturing processes for producing a therapeutic protein drug substance. Also provided are systems that are capable of continuously producing a therapeutic protein drug substance.

WO 2014/137903 A2