

(43) International Publication Date
24 November 2011 (24.11.2011)(10) International Publication Number
WO 2011/146179 A2

(51) International Patent Classification:

C07K 1/36 (2006.01) **C07K 1/34** (2006.01)
C07K 1/18 (2006.01) **B01D 15/12** (2006.01)
C07K 1/22 (2006.01) **B01D 15/38** (2006.01)

(21) International Application Number:

PCT/US2011/032279

(22) International Filing Date:

13 April 2011 (13.04.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/345,634 18 May 2010 (18.05.2010) US

(71) Applicant (for all designated States except US): **ABBOTT LABORATORIES** [US/US]; 100 Abbott Park Road, Abbott Park, IL 60062-6008 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WANG, Chen** [CN/US]; 11 Flamingo Circle, Shrewsbury, MA 01545 (US). **HICKMAN, Robert, K.** [US/US]; 6 Hibiscus Drive, Worcester, MA 01605 (US). **LUNDELL, Edwin, O.** [US/US]; 34 Knight Way, Malborough, MA 01752 (US).

HEGEDUS, Roy, D. [US/US]; 11 Montvale Road, Worcester, MA 01609 (US).

(74) Agents: **VALERNA, James H** et al.; Lathrop & Gage LLP, 28 State Street, Boston, MA 02109 (US).

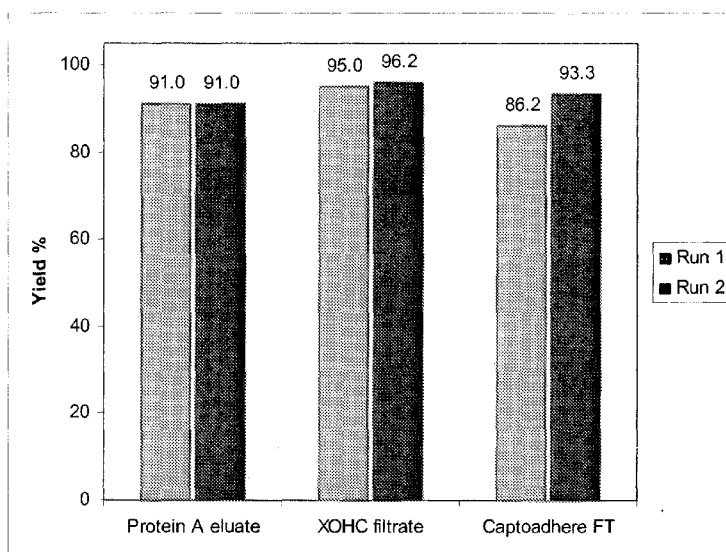
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, 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.

(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).

[Continued on next page]

(54) Title: APPARATUS AND PROCESS OF PURIFICATION OF PROTEINS

Figure 11a.



(57) Abstract: The invention is directed to an apparatus and method for purifying a protein. The apparatus involves the use of a capture chromatography resin, a depth filter arranged after the capture chromatography resin, and a mixed-mode chromatography resin arranged after the depth filter. The method involves providing a sample containing the protein, processing the sample through a capture chromatography resin, a depth filter, and a mixed-mode chromatography resin. A membrane adsorber or monolith may be substituted for the mixed-mode chromatography column.



Published:

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