

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
09 July 2020 (09.07.2020)



(10) International Publication Number
WO 2020/142445 A1

- (51) **International Patent Classification:**
B01D 29/66 (2006.01) *B01D 39/16* (2006.01)
- (21) **International Application Number:**
PCT/US2019/068972
- (22) **International Filing Date:**
30 December 2019 (30.12.2019)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
62/786,884 31 December 2018 (31.12.2018) US
62/846,934 13 May 2019 (13.05.2019) US
- (71) **Applicant: REPLIGEN CORPORATION** [US/US]; 41 Seyon Street, Waltham, Massachusetts 02453 (US).
- (72) **Inventors: BRANSBY, Michael;** 41 Seyon Street, Waltham, Massachusetts 02453 (US). **CARROLL, Derek;** 5200 Wilshire Boulevard, Los Angeles, California 90036

(US). **YUEN, Philip;** 41 Seyon Street, Waltham, Massachusetts 02453 (US).

(74) **Agent: KAUSHAL, Dhruv;** Kacvinsky Daisak Bluni PLLC, 100 Carnegie Center, Suite 106, Princeton, New Jersey 08540 (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,

(54) **Title:** FILTER FOR MAMMALIAN CELL CULTURE PERFUSION AND CLARIFICATION WITH HYDROPHOBIC HOLLOW FIBER

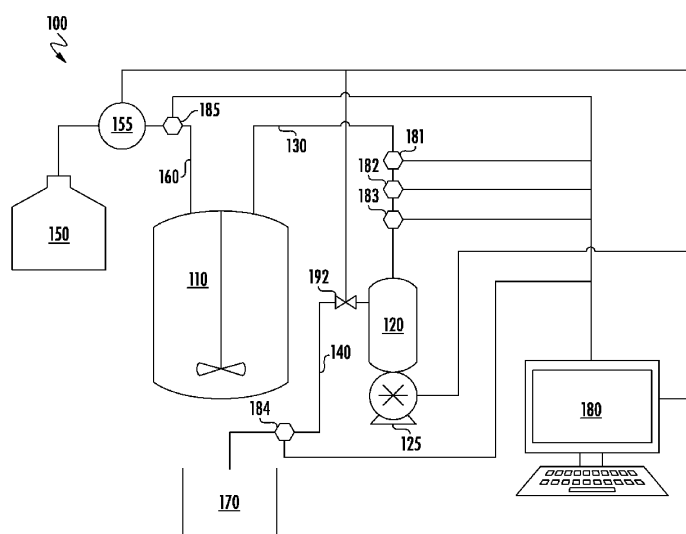


FIG. 1A

(57) **Abstract:** This disclosure relates to the use of a hydrophobic hollow fiber filter for the filtration of cell cultures and other biological perfusions, due to its resistance to fouling, as well as the ability to filter solutions with a high solid content. A hydrophobic hollow fiber filter may be used within a filter housing in conjunction with a process vessel and a traditional separation system. When the system is used with alternating tangential flow or tangential flow filtration, the hydrophobic hollow fiber filter results in more effective filtration of the filtrate, leading to greater concentration of the retentate, even in solution containing high levels of solids.

[Continued on next page]



WO 2020/142445 A1

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).

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))