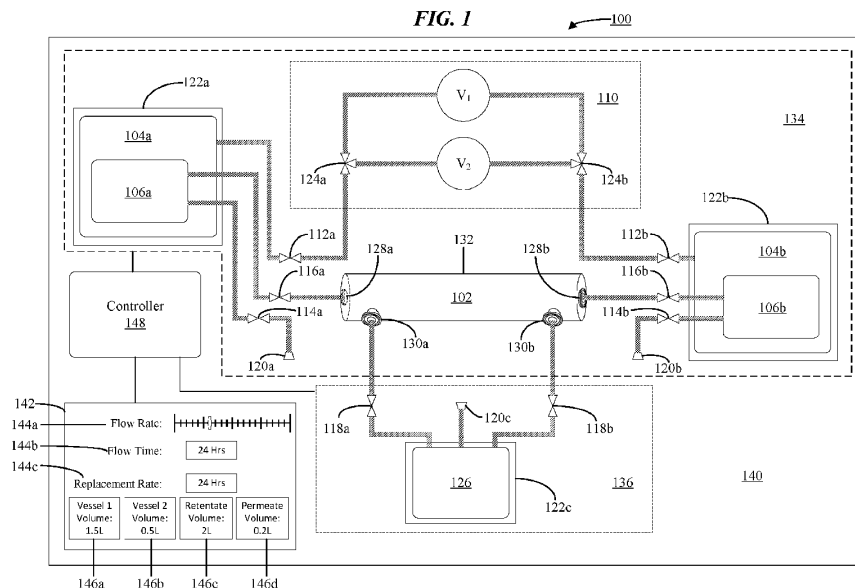




- (51) International Patent Classification:
C12M 3/06 (2006.01) *C12M 1/00* (2006.01)
- (21) International Application Number:
PCT/US2020/064887
- (22) International Filing Date:
14 December 2020 (14.12.2020)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/947,989 13 December 2019 (13.12.2019) US
- (71) Applicant: **REPLIGEN CORPORATION** [US/US]; 41 Seyon Street, Waltham, Massachusetts 02453 (US).
- (72) Inventors: **LE, Bao**; 309 Ruby Street, Redondo Beach, California 90277 (US). **WARD, Travis**; 41 Seyon Corporation, Building #1, Suite 100, Waltham, Massachusetts 02453 (US).
- (74) Agent: **DAISAK, Daniel N.**; Kacvinsky Daisak Bluni PLLC, 2601 Weston Parkway, Suite 103, Cary, North Carolina 27513 (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, IT, 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, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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,

(54) Title: ALTERNATING TANGENTIAL FLOW BIOREACTOR WITH HOLLOW FIBER SYSTEM AND METHOD OF USE



(57) Abstract: Embodiments of the present disclosure relate generally to systems and methods for perfusion cell culture involving alternating fluid flows between first and second flexible vessels. For example, a hollow fiber filter module may be attached to first and second culture vessels which each include inner and outer vessels. A pressure source may cause a pressure differential between the outer vessels, which may cause a responsive fluid flow between the inner vessels across a hollow fiber filtration unit.

[Continued on next page]

WO 2021/119600 A1

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))*