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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
11 February 2010 (11.02.2010)

PCT

(10) International Publication Number
WO 2010/016800 A1

(51) International Patent Classification:
C12M 3/00 (2006.01) *C12N 5/02* (2006.01)
C12N 1/00 (2006.01)

(21) International Application Number:
PCT/SG2008/000293

(22) International Filing Date:
8 August 2008 (08.08.2008)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant *(for all designated States except US)*: **AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH** [SG/SG]; 1 Fusionopolis Way #20-10, Connexis, Singapore 138632 (SG).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **ZHANG, Chi** [CN/SG]; Institute of Bioengineering and Nanotechnology, 31 Biopolis Way #04-01, Nanos, Singapore 138669 (SG). **NOORT, Danny van** [NL/SG]; Institute of Bioengineering and Nanotechnology, 31 Biopolis Way #04-01, Nanos, Singapore 138669 (SG). **YU, Hanry** [SG/SG]; Institute of Bioengineering and Nanotechnology, 31 Biopolis Way #04-01, Nanos, Singapore 138669 (SG).

(74) Agent: **SCHIWECK, Wolfram**; Viering, Jentschura & Partner LLP, P.O. Box 1088, Rochor Post Office, Rochor Road, Singapore 911833 (SG).

(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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

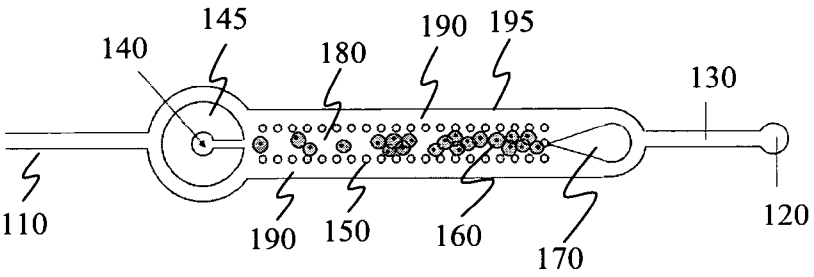
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

(54) **Title**: MICROFLUIDIC CONTINUOUS FLOW DEVICE

FIG.8



(57) **Abstract**: A microfluidic continuous flow device comprising a channel which comprises a first and a second area wherein the first area of the channel is a compartment which is defined by partitioning elements and the second area of the channel is a space outside the compartment; wherein through passages which are formed between the partitioning elements are dimensioned such as to retain a biological material and optionally a sustained release composition which can be comprised in the compartment within the compartment; wherein the channel has a first inlet to the compartment through which biological material can be introduced into the compartment; a second inlet for introducing a cultivation medium into a space of the channel arranged outside of the compartment, and an outlet. The present invention further refers to methods of using the devices of the present invention and kits comprising the microfluidic continuous flow devices of the present invention.

WO 2010/016800 A1