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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 August 2010 (12.08.2010)

PCT

(10) International Publication Number
WO 2010/090513 A3

(51) International Patent Classification:
C12N 5/073 (2010.01)

(21) International Application Number:
PCT/NL2010/000017

(22) International Filing Date:
3 February 2010 (03.02.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

09151970.2	3 February 2009 (03.02.2009)	EP
61/149,622	3 February 2009 (03.02.2009)	US
09171831.2	30 September 2009 (30.09.2009)	EP

(71) Applicant *(for all designated States except US)*: **KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN** [NL/NL]; Uppsalalaan 8, NL-3584 CT Utrecht (NL).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **SATO, Toshiro** [JP/NL]; Langestraat 32a, NL-1211 GZ Hilversum (NL). **CLEVENS, Johannes, Carolus** [NL/NL]; Ruysdaellaan 7, NL-3712 AP Huis ter Heide (NL). **HUCH ORTEGA, Meritxell** [ES/NL]; Willem Barentszstraat 25II, Nl-3572 PB Utrecht (NL).

(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, 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, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, 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))*

— *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))*

(88) Date of publication of the international search report:
25 November 2010

(54) Title: CULTURE MEDIUM FOR EPITHELIAL STEM CELLS AND ORGANOIDS COMPRISING SAID STEM CELLS.

(57) Abstract: The invention relates to a method for culturing epithelial stem cells, isolated tissue fragments comprising said epithelial stem cells, or adenoma cells, and culturing the cells or fragments in the presence of a Bone Morphogenetic Protein (BMP) inhibitor, a mitogenic growth factor, and a Wnt agonist when culturing epithelial stem cells and isolated tissue fragments. The invention further relates to a cell culture medium comprising a BMP inhibitor, a mitogenic growth factor, and a Wnt agonist, to the use of said culture medium, and to crypt-villus organoids, gastric organoids and pancreatic organoids that are formed in said culture medium.

WO 2010/090513 A3