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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 May 2017 (26.05.2017)

WIPO | PCT

(10) International Publication Number
WO 2017/087763 A1

(51) International Patent Classification:
C12N 15/86 (2006.01) *C12N 5/074* (2010.01)
C12N 7/02 (2006.01) *C12N 5/071* (2010.01)

(21) International Application Number:
PCT/US2016/062703

(22) International Filing Date:
18 November 2016 (18.11.2016)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/256,788 18 November 2015 (18.11.2015) US

(71) Applicant: **ORBIS HEALTH SOLUTIONS LLC** [US/US]; 111 Smith Hines Road, Suites E&F, Greenville, South Carolina 29607 (US).

(72) Inventor: **WAGNER, Thomas E.**; 104 Golden Wings Way, Greenville, South Carolina 29650 (US).

(74) Agents: **SCHORR, Kristel** et al.; Foley & Lardner LLP, 3000 K Street NW, Suite 600, Washington, District of Columbia 20007 (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, JP, KE, KG, 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, 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).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

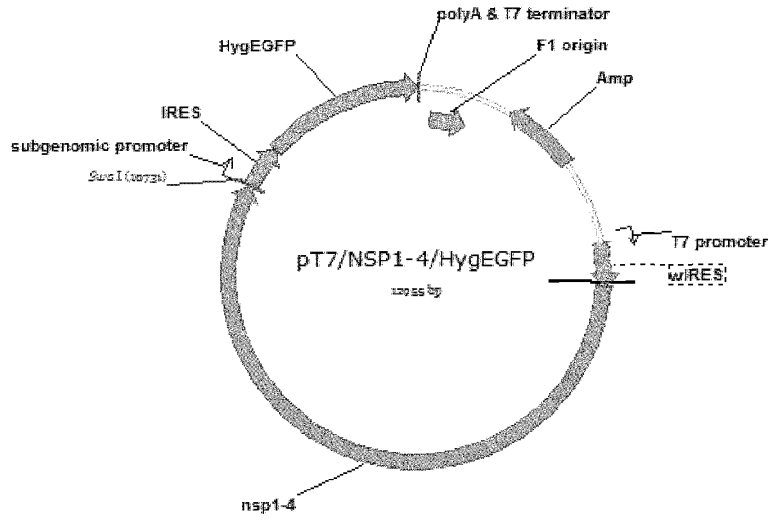
Published:

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

[Continued on next page]

(54) Title: T7 ALPHA VIRAL VECTOR SYSTEM

Figure 1



(57) Abstract: The present invention relates generally to a gene expression system utilizing an alphavirus replicon and T7 promoter. The system is capable of expressing proteins in the cell cytoplasm without integrating the gene of interest into the genome of a host cell. The invention has a wide range of applications such as producing induced pluripotent cells and vaccines against pathogens and cancers.

WO 2017/087763 A1

— *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))*