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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
9 October 2003 (09.10.2003)

PCT

(10) International Publication Number
WO 2003/083070 A3

(51) International Patent Classification[7]: C12N 5/00, 5/02, 5/08

(21) International Application Number: PCT/US2003/009457

(22) International Filing Date: 26 March 2003 (26.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/367,689 26 March 2002 (26.03.2002) US

(71) Applicants *(for all designated States except US)*: **MASSACHUSETTS INSTITUTE OF TECHNOLOGY** [US/US]; Five Cambridge Center, Cambridge, MA 02142-1493 (US). **TECHNION RESEARCH AND DEVELOPMENT FOUNDATION, LTD.** [IL/IL]; P.O. Box 9602, 31096 Haifa (IL).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **AMIT, Michal** [IL/IL]; 261 Yuvalim, 20142 D.N. Misgav (IL). **ITSKOVITZ-ELDOR, Joseph** [IL/IL]; 42 She'erit Hapleta, 34987 Haifa (IL). **LEVENBERG, Shulamit** [IL/US]; 19 Wiltshire Road, Brighton, MA 02135 (US). **LANGER, Robert, S.** [US/US]; 98 Montvale Road, Newton, MA 02459 (US).

(74) Agent: **ROSEN, Valarie, B.**; Choate, Hall & Stewart, Exchange Place, 53 State Street, Boston, MA 02109 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

(88) Date of publication of the international search report:
26 February 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ENDOTHELIAL CELLS DERIVED FROM HUMAN EMBRYONIC STEM CELLS

(57) Abstract: The invention is a population of embryonic endothelial cells produced *in vitro* from human embryonic stem cells. The cells produce platelet endothelial cell adhesion molecule-1 and are vasculogenic. The cells may be combined with a cell support substrate, seeded on a polymer matrix, or combined with a cell-support substrate that is infused into a polymer matrix. The cells may also be injected directly into a tissue site.

WO 2003/083070 A3