

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
16 October 2003 (16.10.2003)

PCT

(10) International Publication Number
WO 2003/085092 A3

(51) International Patent Classification⁷: **C12N 5/00**

SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US,
UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/US2003/009505

(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).

(22) International Filing Date: 31 March 2003 (31.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/368,563 1 April 2002 (01.04.2002) US

Declarations under Rule 4.17:

- *as to the identity of the inventor (Rule 4.17(i)) for all designations*
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

(71) Applicant and

(72) Inventor: **LAW, Peter, K.** [US/US]; 2015 Miller Farms Road, Germantown, TN 38138 (US).

Published:

- *with international search report*
- *with amended claims*

(74) Agents: **MOTSENBOCKER, MARVIN, A.** et al.; Heller Ehrman White & McAuliffe LLP, 1666 K Street, N.W., Suite 300, Washington, DC 20006-1228 (US).

(88) Date of publication of the international search report:
8 January 2004

(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, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD,

Date of publication of the amended claims: 19 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: CELLULAR TRANSPLANTATION FOR HEART REGENERATION

(57) Abstract: Myoblast cells obtained by culturing, particularly from satellite cells or other progenitor cells, are transplanted into tissue such as diseased heart tissue to form healthy repair tissue and reverse disease. This technique can be carried out in various ways and preferably includes a cellular integration factor to assist cellular survival, integration and longevity into the treated organ. Angiogenesis factors such as vascular endothelial growth factor are particularly preferred and may be transgenically expressed by the transplanted cell. Other factors that may be used to augment the procedure include migratory and scaffolding molecules. The methods and materials are particularly useful in combination with an automated cell processor and an automated catheter delivery system. The materials and methods for their use may be applied to the prophylaxis and therapy of damaged hearts, using cells originally obtained from the patient, another human, or another animal.



WO 2003/085092 A3