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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 May 2001 (17.05.2001)

PCT

(10) International Publication Number
WO 01/34208 A1

(51) International Patent Classification[7]: A61K 48/00, 38/18, C07K 14/50, 14/49, A61P 9/00, 9/04, 9/10

(21) International Application Number: PCT/US00/30345

(22) International Filing Date:
3 November 2000 (03.11.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

09/435,156	5 November 1999 (05.11.1999)	US
09/609,080	30 June 2000 (30.06.2000)	US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

US	09/435,156 (CIP)
Filed on	5 November 1999 (05.11.1999)
US	09/609,080 (CIP)
Filed on	30 June 2000 (30.06.2000)

(71) Applicant *(for all designated States except US)*: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA [US/US]; 1111 Franklin Street, 12th floor, Oakland, CA 94607 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: HAMMOND, H., Kirk [US/US]; 9537 La Jolla Farms Road, La Jolla, CA 92037 (US). GIORDANO, Frank, J. [US/US]; 13119 Caminito Mar Villa, Del Mar, CA 92014 (US). DILLMANN, Wolfgang, H. [US/US]; 335 S. Nardo Avenue, Solana Beach, CA 92075 (US).

(74) Agents: POLIZZI, Catherine, M. et al.; Morrison & Foerster LLP, 755 Page Mill Road, Palo Alto, CA 94304-1018 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, 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, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

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

Published:
— *With international search report.*

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.

WO 01/34208 A1

(54) Title: TECHNIQUES AND COMPOSITIONS FOR TREATING CARDIOVASCULAR DISEASE BY *IN VIVO* GENE DELIVERY

(57) Abstract: Methods are provided for treating patients with cardiovascular disease, including heart disease and peripheral vascular disease. The preferred methods of the present invention involve *in vivo* delivery of genes, encoding angiogenic proteins or peptides, to the myocardium or to peripheral ischemic tissue, by introduction of a vector containing the gene into a blood vessel supplying the heart or into a peripheral ischemic tissue.