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(71) Applicant *(for all designated States except US)*: **ANTEROGEN CO., LTD.** [KR/KR]; 399-1 Daebang-dong, Dongjak-gu, Seoul 156-811 (KR).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **LEE, Ike, W.** [US/US]; 178 Edgehill Road, Norwood, MA 02062 (US). **LIU, Guizhen** [CN/US]; 102 Village Road, West, Norwood, MA 02062 (US). **HAMPE, James** [US/US]; 107 Gainsville Road, Dedham, MA 02026 (US). **CROISSANT, Jeffrey, D.** [US/US]; 12 Seagull Lane, Scituate, MA 02066 (US).

(74) Agent: **BIEKER-BRADY, Kristina**; Clark & Elbing LLP, 101 Federal Street, Boston, MA 02110 (US).

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(54) Title: METHODS AND REAGENTS FOR CELL TRANSPLANTATION

(57) Abstract: The invention features methods for producing cells for transplantation into myocardial tissue of a mammal (e.g., a human). The method includes the steps of (a) providing a population of bone marrow stem cells; (b) culturing the cells under conditions that induce the cells to become cardiomyogenic cells; (c) monitoring the state of differentiation of the cells of step (b); and (d) collecting the cells of step (b) when at least about 10% and as many as 100% of the cells are cardiomyogenic cells. The bone marrow stem cells can be, for example, human bone marrow stem cells. In one embodiment, the method includes the step of transplanting the differentiated stem cells into a mammal (e.g., a human).