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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 March 2009 (26.03.2009)

PCT

(10) International Publication Number
WO 2009/036982 A1

(51) International Patent Classification:
*C12N 5/06* (2006.01)

(21) International Application Number:
PCT/EP2008/007835

(22) International Filing Date:
18 September 2008 (18.09.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

| | | |
|---|---|---|
| PA 2007 01345 | 18 September 2007 (18.09.2007) | DK |
| 60/960,160 | 18 September 2007 (18.09.2007) | US |
| 60/996,768 | 4 December 2007 (04.12.2007) | US |
| 61/129,177 | 9 June 2008 (09.06.2008) | US |

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(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, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(54) Title: CARDIOMYOCYTE-LIKE CELL CLUSTERS DERIVED FROM HBS CELLS

(57) Abstract: A cluster comprising cardiomyocyte-like cells, wherein the cluster has i) contracting cells, ii) cells that are electrically connected, and expresses iii) cardiac markers including Nkx.2.5, troponin and myosin, iv) markers for functional adrenergic receptors, v) markers for functional muscarinic receptors, vi) markers for functional ion-channels including hERG, Na+, $Ca^{2}$+ and K+ channels, vii) one or more endodermal markers selected from the group consisting of AFP, TF, APOA2, AHSG, SERPINA1, APOA1, APOC3, TTR1 APOB, and RBP4. A method for preparing the clusters and the use of the clusters in drug discovery and toxicity screenings are described.

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