



(51) International Patent Classification:

C12N 5/0735 (2010.01) C07D 471/04 (2006.01)
C12N 5/02 (2006.01) C07D 233/56 (2006.01)

(21) International Application Number:

PCT/US2013/045617

(22) International Filing Date:

13 June 2013 (13.06.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/741,776 14 June 2012 (14.06.2012) 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, BN, BR, BW, BY,
BZ, CA, CH, CL, 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, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC,
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

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

Published:

- with international search report (Art. 21(3))

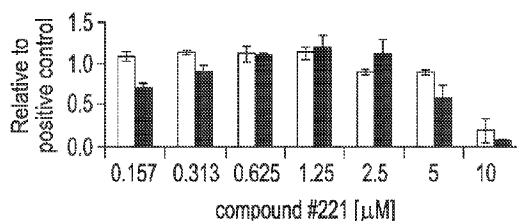
(88) Date of publication of the international search report:

13 March 2014

(54) Title: DIFFERENTIATION OF HUMAN EMBRYONIC STEM CELLS INTO PANCREATIC ENDOCRINE CELLS

FIG. 1A

Cell number



(57) Abstract: The present invention is directed to methods to treat pluripotent cells, whereby the pluripotent cells can be efficiently expanded in culture and differentiated by treating the pluripotent cells with an inhibitor of GSK-3B enzyme activity.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/045617**A. CLASSIFICATION OF SUBJECT MATTER****C12N 5/0735(2010.01)i, C12N 5/02(2006.01)i, C07D 471/04(2006.01)i, C07D 233/56(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHEDMinimum documentation searched (classification system followed by classification symbols)
C12N 5/0735; C12N 5/00; C12N 5/08; C12N 5/02; C07D 471/04; C07D 233/56Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility modelsElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: inhibitor, GSK-3B enzyme, pluripotent cell, differentiation, expansion**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009-0325293 A1 (DAVIS, JANET et al.) 31 December 2009 See abstract; and claims 1-126.	1-126
A	WO 2007-030870 A1 (ES CELL INTERNATIONAL PTE LTD et al.) 22 March 2007 See the whole document.	1-126
A	US 2006-0030042 A1 (BRIVANLOU, ALI et al.) 09 February 2006 See the whole document.	1-126
A	POUTON, COLIN W. et al., 'Embryonic stem cells as a source of models for drug discovery', Nature Reviews Drug Discovery, August 2007, Vol. 6, No. 8, pp. 605-616 See the whole document.	1-126
A	SATO, NOBORU et al., 'Maintenance of pluripotency in human and mouse embryonic stem cells through activation of Wnt signaling by a pharmacological GSK-3-specific inhibitor', Nature Medicine, Epub 21 December 2003, Vol. 10, No. 1, pp. 55-63 See the whole document.	1-126

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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"&" document member of the same patent family

Date of the actual completion of the international search

25 November 2013 (25.11.2013)

Date of mailing of the international search report

26 November 2013 (26.11.2013)

Name and mailing address of the ISA/KR

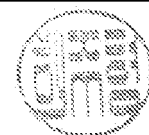
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2013/045617

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009-0325293 A1	31/12/2009	AU 2009-239447 A1 CA 2722623 A1 CN 102105580 A EP 2283114 A2 JP 2011-518563 A KR 10-2011-0004879 A MX 2010011738 A RU 2010147818 A SG 190577A1 WO 2009-132068 A2 WO 2009-132068 A3	29/10/2009 29/10/2009 22/06/2011 16/02/2011 30/06/2011 14/01/2011 22/11/2010 27/05/2012 28/06/2013 29/10/2009 17/12/2009
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