

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
29 May 2008 (29.05.2008)

PCT

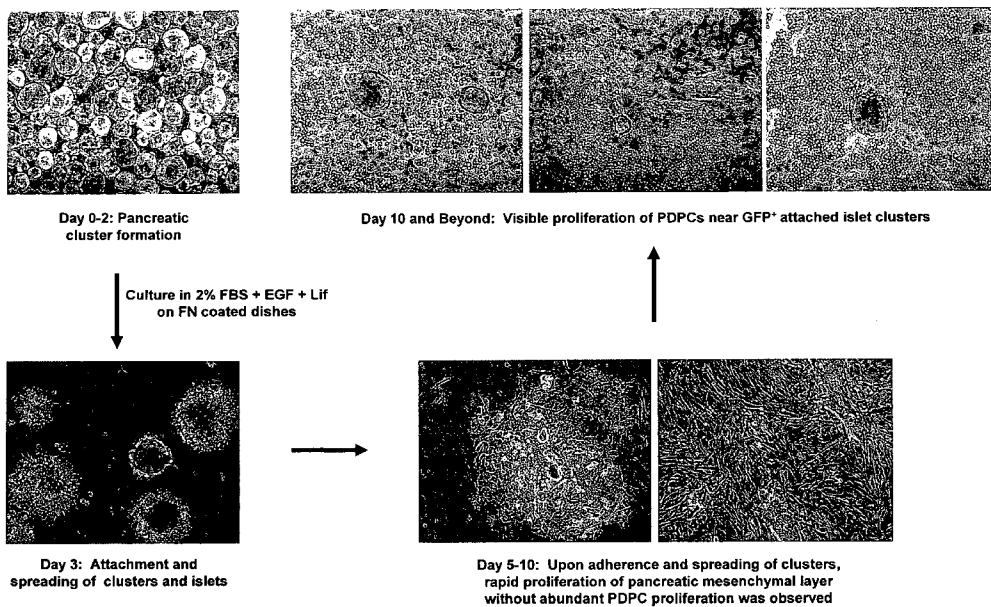
(10) International Publication Number
WO 2008/063675 A3

- (51) International Patent Classification:
C12N 5/08 (2006.01)
- (21) International Application Number:
PCT/US2007/024415
- (22) International Filing Date:
26 November 2007 (26.11.2007)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/867,135 24 November 2006 (24.11.2006) US
- (71) Applicant (for all designated States except US): **REGENTS OF THE UNIVERSITY OF MINNESOTA** [US/US]; 1000 Westgate Drive, Suite 160, St. Paul, MN 55114-8658 (US).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, 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, 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, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, 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
 - with sequence listing part of description published separately in electronic form and available upon request from the International Bureau
- (88) Date of publication of the international search report:
3 July 2008

(54) Title: ENDODERMAL PROGENITOR CELLS



(57) Abstract: The present invention relates to endodermal progenitor cells and methods of isolation, culture, differentiation and use thereof.



WO 2008/063675 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/024415

A. CLASSIFICATION OF SUBJECT MATTER INV. C12N5/08		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) C12N		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, BIOSIS, EMBASE, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TA MALANCHA ET AL: "The defined combination of growth factors controls generation of long-term-replicating islet progenitor-like cells from cultures of adult mouse pancreas" STEM CELLS (MIAMISBURG), vol. 24, no. 7, July 2006 (2006-07), pages 1738-1749, XP002478911 ISSN: 1066-5099 the whole document ----- -/--	1-30
<input checked="" type="checkbox"/>	Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.
* Special categories of cited documents :		
<p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p>		<p>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>*Z* document member of the same patent family</p>
Date of the actual completion of the international search 5 May 2008		Date of mailing of the international search report 23/05/2008
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Morawetz, Renate

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/024415

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ZULEWSKI H ET AL: "Multipotential nestin-positive stem cells isolated from adult pancreatic islets differentiate ex vivo into pancreatic endocrine, exocrine and hepatic phenotypes" DIABETES, NEW YORK, NY, US, vol. 50, no. 3, 1 March 2001 (2001-03-01), pages 521-533, XP002955659 ISSN: 0012-1797 the whole document	1-30
X	SAHIN MUSTAFA BEHNAN ET AL: "Isolation and characterization of immature hepatic stem cells derived from unmanipulated rat liver." BLOOD, vol. 102, no. 11, 16 November 2003 (2003-11-16), page 336a, XP009099481 & 45TH ANNUAL MEETING OF THE AMERICAN SOCIETY OF HEMATOLOGY; SAN DIEGO, CA, USA; DECEMBER 06-09, 2003 ISSN: 0006-4971 the whole document	1-30
X	SUZUKI A ET AL: "Clonal identification and characterization of self-renewing pluripotent stem cells in the developing liver" THE JOURNAL OF CELL BIOLOGY, ROCKEFELLER UNIVERSITY PRESS, US, vol. 156, no. 1, 7 January 2002 (2002-01-07), pages 173-184, XP002277322 ISSN: 0021-9525 the whole document	19-30
X	PETERSEN BRYON E ET AL: "Mouse A6-positive hepatic oval cells also express several hematopoietic stem cell markers." HEPATOLOGY, vol. 37, no. 3, March 2003 (2003-03), pages 632-640, XP002478769 ISSN: 0270-9139 the whole document	19-30

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/024415

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>D'IPPOLITO G ET AL: "Marrow-isolated adult multilineage inducible (MIAMI) cells, a unique population of postnatal young and old human cells with extensive expansion and differentiation potential" JOURNAL OF CELL SCIENCE, CAMBRIDGE UNIVERSITY PRESS, LONDON, GB, vol. 117, no. part 14, 15 June 2004 (2004-06-15), pages 2971-2981, XP002339338 ISSN: 0021-9533 the whole document</p>	19-30
X	<p>DEUTSCH GAIL ET AL: "A bipotential precursor population for pancreas and liver within the embryonic endoderm" DEVELOPMENT, COMPANY OF BIOLOGISTS, CAMBRIDGE, GB, vol. 128, no. 6, 15 March 2001 (2001-03-15), pages 871-881, XP008090542 ISSN: 0950-1991 the whole document</p>	19-30
X	<p>WO 2005/007073 A (GAMIDA CELL LTD [IL]; MARIKOVSKY MOSHE [IL]; PELED TONY [IL]; GRYNSPAN) 27 January 2005 (2005-01-27) the whole document</p>	
A	<p>BAEYENS L ET AL: "In vitro generation of insulin-producing beta cells from adult exoc DIAE DIAE BE, vol. 1 J: XP019322298 ISSN: 1432-0428 the whole document</p>	
A	<p>LARDON JESSY ET AL: "Metaplasia in the pancreas" DIFFERENTIATION, vol. 73, no. 6, July 2005 (2005-07), pages 278-286, XP002478771 ISSN: 0301-4681 the whole document</p>	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/024415

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 25 and 26 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/024415

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2005007073 A	27-01-2005	EP 1648397 A2	26-04-2006
		US 2007082397 A1	12-04-2007
