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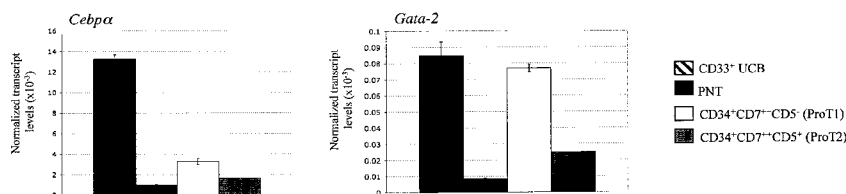
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(54) Title: HUMAN PROGENITOR T-CELLS

Figure 9



(57) Abstract: Human progenitor T cells that are able to successfully engraft a murine thymus and differentiate into mature human T and NK cells are described. The human progenitor T cells have the phenotype CD34⁺CD7⁺CD1a⁻CD5⁻ or CD34⁺CD7⁺CD1a⁻CD5⁺ and are derived from human hematopoietic stem cells, embryonic stem cells and induced pluripotent stem cells b) coculture with cells expressing a Notch receptor ligand (OP9-DL1 or OP9-DL4). Such cells are useful in a variety of applications including immune reconstitution, the treatment of immunodeficiencies and as carriers for genes used in gene therapy.

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14 April 2010 (14.04.2010)

International application No.
PCT/CA2009/001601

A. CLASSIFICATION OF SUBJECT MATTER IPC: <i>C12N 5/0783</i> (2010.01) , <i>A61K 35/14</i> (2006.01) , <i>A61P 31/18</i> (2006.01) , <i>A61P 35/00</i> (2006.01) , <i>A61P 37/06</i> (2006.01) , <i>C12N 5/10</i> (2006.01) 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) IPC: <i>C12N 5/0783</i> (2010.01) , <i>A61K 35/14</i> (2006.01) , <i>A61P 31/18</i> (2006.01) , <i>A61P 35/00</i> (2006.01) , <i>A61P 37/06</i> (2006.01) , <i>C12N 5/10</i> (2006.01) Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used) Scopus, Canadian Patent Database (CPC), PubMed Keywords: T cell, T lymphocyte, T progenitor, NK cell, natural killer cell, notch ligand, IL-2, IL-15, CD34, CD7, CD1a, CD5		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	LA MOTTE-MOHS, R et al. <i>In vitro</i> models of human T cell development: dishing out progenitor T cells. Current Immunology Reviews. 2007, Vol.3, pages 57-75, ISSN 1573-3955. * Whole document *	1-16
X	IMATAKI, O et al. Limited but potential efficacy by graft-versus-leukemia (GVL) for Pro T-ALL. Gan to kagaku ryoho. 01 November 2008, Vol. 35, No. 11, pages 1911-1914, ISSN 0385-0684. * Abstract only *	1, 2
X	HADDAD, R et al. Dynamics of thymus-colonizing cells during human development. Immunity. 2006, Vol.24, pages 217-230, ISSN 1074-7613. * Abstract, introduction *	1, 3
X	LIU, C-C et al. The emerging role of IL-15 in NK-cell development. Immunology today. 2000, Vol.21, No.3, pages 113-116, ISSN 0167-5699. * Whole document *	1, 16
☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.		
*	Special categories of cited documents :	
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"
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		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
		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
		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
		document member of the same patent family
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SANCHEZ, MJ et al. Identification of a common T/Natural Killer cell progenitor in human fetal thymus. The Journal of Experimental Medicine. 1994, Vol.180, pages 569-576, ISSN 0022-1007. * Abstract, results *	1, 16
P, X	TIMMERMANS, F et al. Generation of T cells from human embryonic stem cell-derived hematopoietic zones. Journal of Immunology. 01 June 2009, Vol.182, No.11, pages 6879-6888, ISSN 0022-1767. * Whole document *	10-15
P, X	AWONG, G et al. Characterization in vitro and engraftment potential in vivo of human progenitor T cells generated from hematopoietic stem cells. Blood. 02 June 2009, Vol.114, No.5, pages 972-982, ISSN 1528-0020. * Whole document *	1-16