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(54) Title: MODIFIED CELLS EXPRESSING A PROTEIN THAT MODULATES ACTIVITY OF bHLH PROTEINS, AND USES THEREOF

(57) Abstract: The present invention relates to modified cells carrying a heterologous gene sequence encoding a protein, such as an Inhibitor of differentiation (Id) gene sequence that binds a basic helix-loop-helix (bHLH) protein to inhibit cell growth, differentiation and/or tumorigenesis of the modified cells. The modified cells are differentiated, proliferate and do not become tumorigenic when grafted into a recipient subject. Additionally, the modified cells produce a factor or factors that enhance the viability of co-grafted organs, tissues or cells. Thus, the modified cells are useful for testing agents for effects on the cells, for co-grafting with transplant organs, tissues or cells. The modified cells are also useful for enhancing the viability of thawing cells that have been cryo-preserved. In one embodiment, the modified cells are modified Sertoli cells.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/14857

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: A01N 63/00(2006.01);A61K 48/00(2006.01)

USPC: 424/93.21
 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)
 U.S. : 424/93.21

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 practicable, search terms used)
 Please See Continuation Sheet

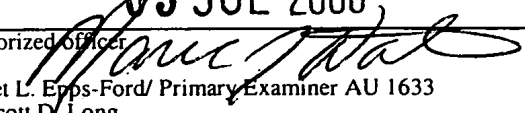
C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Gregg Semenza (Trends in Molecular Medicine. 2002; 8(4): S62-S67)	1-5, 7-16, 18-21, 27-30, 32-34, 36, 38-42, 50-53, 55, 63, 65-68
X	US2002/0137064 (Desprez et al) published 26/9/2002	1-69
Y	US2002/0102604 (Edwards et al.) published 1/8/2002	1-69
Y	Benezra (Biochemica et Biophysica Acta. 2001; 1551:F39-F47)	1-69

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" 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
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer  /Janet L. Epps-Ford/ Primary Examiner AU 1633 for Scott D. Long Telephone No. 571-272-0500
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Continuation of B. FIELDS SEARCHED Item 3:

databases: EAST, STN, medline, biosis, caplus, scisearch, embase

search terms: "helix," "loop," "bHLH," "differentiation inhibitor," "transplant," "graft," "sertoli"