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(54) Title: NOVEL GENETIC APPROACHES TO REDUCE OR INHIBIT TUMORGENICITY OF HUMAN EMBRYONIC STEM CELLS AND DERIVATIVES FOLLOWING TRANSPLANTATION

(57) Abstract: Self-renewable embryonic stem cells (ESCs), derived from the inner cell mass of blastocysts, can propagate indefinitely in culture while maintaining their normal karyotypes and pluripotency to differentiate into all cell types. Therefore, ESCs may provide an unlimited supply of even specialized cells such as brain and heart cells for transplantation and cell-based therapies that are otherwise limited by donor availability. However, this promising application is hampered by concerns that ESCs or their multipotent derivatives also possess the potential to form malignant tumors after transplantation in vivo. The present invention provides for a novel genetic method to arrest undesirable cell division (of ESCs and other unwanted lineages) as a means to inhibit or eliminate their tumorgenic potential after transplantation.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/06661

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **C12N 15/85**(2006.01),**15/63**(2006.01)

USPC: 435/455,325,320.1
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. : 435/455, 325, 320.1

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)
STN: EMBASE BIOSIS CAPLUS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WANG, K. et al. Electrophysiological Properties of Pluripotent Human and Mouse Embryonic Stem Cells. Stem Cells. 2005, Vol 23. pages 1526-1534.	1-12

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

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