

**Key to fields:**

**PN/ PNFP: Publication Number**

**PD : Publication Date**

**PA: Patent Assignee**

**IN: Inventor**

**TI: Title**

**AB: Abstract**

**GRANTED: Date "B" specification published**

**UKNSCN MOP UP SEARCH: 1<sup>ST</sup> NOV 2008- 31<sup>ST</sup> OCT 2009**

**PUBLISHED "A" SPECS**

**ADULT STEM CELLS- 30 documents**

© EPODOC / EPO

PN - US2008311093 A1 20081218  
PD - 2008-12-18  
PA - AMERICAN SYMBOLIC LLC  
IN - SKINNER KEITH K [US]  
TI - STEM CELL SECRETIONS AND RELATED METHODS  
AB - Stem cell secretions are derived from epithelial cells conditioned media. The stem cell secretions are then applied topically, orally, or rectally, etc., to derive health benefits from the growth factors and other molecules comprising the stem cell secretion. The stem cell secretion may optionally be modified by covalently bonding fatty acids to protect the molecules through the delivery process and to make them more readily available to cells.

© EPODOC / EPO

PN - US2008313752 A1 20081218  
PD - 2008-12-18  
IN - MIYAMOTO KAORU [JP]; YAZAWA TAKASHI [JP]; UMEZAWA AKIHIRO [JP]  
TI - Method for Differentiating Mesenchymal Stem Cells Into Steroid-Producing Cells  
AB - To control the differentiation of mesenchymal stem cells into steroid hormone producing cells. Mesenchymal stem cells can be differentiated into steroid hormone-producing cells by being stimulated by a transcriptional factor (SF-1), preferably by the transcriptional factor (SF-1) and cAMP. The present invention is a method for differentiating mesenchymal stem cells into steroid hormone producing cells, comprising stimulating the mesenchymal stem cells by the transcriptional factor (SF-1). The mesenchymal stem cells may be further stimulated by cAMP.

© EPODOC / EPO

PN - US2008311607 A1 20081218  
PD - 2008-12-18  
PA - UNIV TEXAS [US]  
IN - GENG YONG-JIAN [US]; WASSLER MICHAEL [US]  
TI - Methods and Compositions for Regulation of Stem Cell Survival, Proliferation, and Differentiation by Protein Ubiquitination  
AB - Compositions and methods for regulating in vitro cell growth are disclosed, and for providing undifferentiated stem cells or embryonic cells that are suitable for transplantation into damaged tissues or organs, or for use in tissue repair. A representative method includes causing the overexpression or underexpression of GalT binding protein (GtBP), also referred to as GalT associated protein (GTAP), in a cell such that ubiquitination of at least one cellular protein associated with cell adhesion and/or cell-to-cell interaction is correspondingly increased or decreased, causing

inhibition of cell growth when GTAP is overexpressed and causing enhanced cell growth when GTAP is underexpressed by the cell. As a result, growth of the cell is altered or regulated.

© EPODOC / EPO

PN - US2008311094 A1 20081218  
PD - 2008-12-18  
PA - UNIV LOUVAIN [BE]  
IN - SOKAL ETIENNE [BE]; NAJIMI MUSTAPHA [BE]  
TI - Isolated Liver Stem Cells  
AB - Isolated liver progenitor stem cells and cell populations of isolated liver progenitor stem cells are disclosed. The progenitor stem cells originate from adult liver, especially human adult liver. The isolated progenitor stem cells have uses in medicine, hepatology, inborn errors of liver metabolism transplantation, infectious diseases and liver failure. Methods of isolating these cells and their culture is described. The isolated cells are characterized before and after differentiation. Their use for transplantation and as animal models of human disease, toxicology and pharmacology is disclosed.

© EPODOC / EPO

PN - WO2008153987 A2 20081218  
PD - 2008-12-18  
PA - US GOVERNMENT [US]; UNIV OHIO STATE RES FOUND [US]; WANG XIN WEI [US]; JI JUNFANG [CN]; YAMASHITA TARO [JP]; CROCE CARLO M [US]  
IN - WANG XIN WEI [US]; JI JUNFANG [CN]; YAMASHITA TARO [JP]; CROCE CARLO M [US]  
TI - METHODS FOR DETERMINING HEPATOCELLULAR CARCINOMA SUBTYPE AND DETECTING HEPATIC CANCER STEM CELLS  
AB - The invention provides a method of determining an HCC subtype in a subject comprising a) obtaining a sample from the subject, b) assaying the sample to detect the expression of 1 or more biomarkers, and c) correlating the expression of the biomarkers with an HCC subtype in a subject. The invention further provides methods of detecting HCC stem cells in a sample. Additionally, the invention provides methods and compositions for treating subjects with HCC that take advantage of the biomarkers associated with HCC stem cells.

© EPODOC / EPO

PN - WO2008153179 A1 20081218  
PD - 2008-12-18  
PA - MATSUYAMA AKIFUMI [JP]; KOMODA HIROSHI [JP]; OHKURA HANAYUKI [JP]; SAWA YOSHIKI [JP]  
IN - MATSUYAMA AKIFUMI [JP]; KOMODA HIROSHI [JP]; OHKURA HANAYUKI [JP]; SAWA YOSHIKI [JP]  
TI - MULTIPOTENT PROGENITOR CELL DERIVED FROM ADIPOSE TISSUE  
AB - Disclosed is a cell mass containing an adipose-tissue-derived multipotent progenitor cell. Also disclosed is a method for producing an adipose-tissue-derived multipotent progenitor cell from an adipose tissue, which comprises the steps of: (a) removing erythrocytes from an adipose-tissue-derived cell mass to produce a preadipose-tissue-derived multipotent progenitor cell mass; and (b) removing cells other than the adipose-tissue-derived multipotent progenitor cell from the preadipose-tissue-derived multipotent progenitor cell mass to produce the desired adipose-tissue-derived multipotent progenitor cell. Further disclosed is an adipose-tissue-derived multipotent progenitor cell produced by the method.

© EPODOC / EPO

PN - WO2008152640 A2 20081218  
PD - 2008-12-18  
PA - PLURISTEM LTD [IL]; MERETZKI SHAI [IL]; BARKAI URIEL [IL]; ZIPORI DOV [IL]; KADOURI AVINOAM [IL]

IN - MERETZKI SHAI [IL]; BARKAI URIEL [IL]; ZIPORI DOV [IL]; KADOURI AVINOAM [IL]  
TI - THREE DIMENSIONAL BIOCOMPATIBLE SCAFFOLDS FOR EX-VIVO EXPANSION AND TRANSPLANTATION OF STEM CELLS  
AB - A method of transplanting undifferentiated hematopoietic stem cells into a recipient is disclosed. The method comprising (a) expanding the undifferentiated hematopoietic stem cells to increase the number of the hematopoietic stem cells by (i) culturing in a stationary phase plug-flow bioreactor stromal cells under continuous flow of a culture medium on a three dimensional biocompatible substrate to thereby generate a three dimensional stromal cell culture; and (ii) seeding undifferentiated hematopoietic stem cells into the stationary phase plug-flow bioreactor including the three dimensional stromal cell culture and under a continuous flow of a culture medium, thereby expanding the undifferentiated hematopoietic stem cells and obtaining a three dimensional stromal cell culture comprising increased number of hematopoietic stem cells; and (b) transplanting the three dimensional stromal cell culture comprising hematopoietic stem cells resulting from (a) into the recipient.

© EPODOC / EPO

PN - WO2008144052 A2 20081127  
PD - 2008-11-27  
PA - WALIA RAMPYARI [US]  
IN - WALIA RAMPYARI [US]  
TI - BIOLUMINESCENT IMAGING OF STEM CELLS  
AB - Methods and compositions for detecting and localizing light originating from cultured stem cells or stem cells injected into tissue or an animal, especially a mammal, are described. Also disclosed are methods for localization of stem cells in selected regions, as well as for tracking stem cells within the mammal, and for causing stem cell differentiation.

© EPODOC / EPO

PN - WO2008151021 A1 20081211  
PD - 2008-12-11  
PA - NEVADA CANCER INST [US]; MA YUPO [US]; FINK LOUIS M [US]; WARD DAVID C [US]; WANER MILTON E [US]  
IN - MA YUPO [US]; FINK LOUIS M [US]; WARD DAVID C [US]; WANER MILTON E [US]  
TI - ISOLATION AND GROWTH OF STEM CELLS FROM HEMANGIOMAS  
AB - The present invention describes stem cells and progenitor cells derived from hemangiomas, including testing of angiogenic inhibitors using these cells. The invention as described is useful in providing a process to culture and propagate hemangioma stem cells and generate xenograft models to develop treatments for infantile hemangiomas and other types of vascular lesions.

© EPODOC / EPO

PN - WO2008150368 A1 20081211  
PD - 2008-12-11  
PA - APCETH GMBH & CO KG [DE]; HUSS RALF [DE]; NELSON PETER [DE]; RAGGI MATTHIAS [DE]; STANGL MANFRED [DE]  
IN - HUSS RALF [DE]; NELSON PETER [DE]; RAGGI MATTHIAS [DE]; STANGL MANFRED [DE]  
TI - CD34 STEM CELL-RELATED METHODS AND COMPOSITIONS  
AB - This invention provides novel stem cell-based methods for treating a number of conditions. These methods employ CD34- stem cells, and have a tremendous advantage in that they do not require myeloablation in the subject being treated. The CD34- stem cells used in the instant methods can be genetically modified or not, depending on the disorder treated.

© EPODOC / EPO

PN - US2008305085 A1 20081211  
PD - 2008-12-11  
IN - SCADDEN DAVID T [US]; STIER SEBASTIAN [DE]  
TI - Compositions And Methods For Stem Cell Expansion  
AB - The present invention features methods and compositions that are useful for promoting stem cell survival and expansion. In addition, the invention also provides compositions and methods for the treatment of neoplasia.

© EPODOC / EPO

PN - US2008305074 A1 20081211  
PD - 2008-12-11  
PA - AMGEN INC [US]  
IN - ZSEBO KRISZTINA M [US]; BOSSELMAN ROBERT A [US]; SUGGS SIDNEY V [US]; MARTIN FRANCIS H [US]  
TI - Stem cell factor  
AB - Novel stem cell factors, oligonucleotides encoding the same, and methods of production, are disclosed. Pharmaceutical compositions and methods of treating disorders involving blood cells are also disclosed.

© EPODOC / EPO

PN - WO2008150001 A1 20081211  
PD - 2008-12-11  
PA - BIOMASTER INC [JP]; NAT HOSPITAL ORGANIZATION [JP]; NAGASE TAKASHI [JP]; KIKUCHI TOSHIYUKI [JP]; FUJITA YUKO [JP]; MURASE SHOKO [JP]  
IN - NAGASE TAKASHI [JP]; KIKUCHI TOSHIYUKI [JP]; FUJITA YUKO [JP]; MURASE SHOKO [JP]  
TI - ADIPOCLUSTER  
AB - An object is to examine whether or not the requirement of a clone property is needed in the preparation of a neural stem cell preparation. Another object is to provide a method for preparing a neural stem cell in a simple manner. Thus, disclosed is a method for producing cells containing a cell derived from a Musashi-positive adipose tissue, which comprises the steps of: providing a cell derived from an adipose tissue; and subjecting the cell to the floating culture for a sufficient period for producing an aggregate.

© EPODOC / EPO

PN - WO2008149803 A1 20081211  
PD - 2008-12-11  
PA - UNIV TOKYO [JP]; MORIMOTO CHIKAO [JP]; YAMAZAKI HIROTO [JP]; NISHIDA HIROKO [JP]  
IN - MORIMOTO CHIKAO [JP]; YAMAZAKI HIROTO [JP]; NISHIDA HIROKO [JP]  
TI - METHOD OF SORTING AND IDENTIFYING CANCER STEM CELLS IN ACUTE LYMPHOCYTIC LEUKEMIA USING SURFACE ANTIGEN MARKERS  
AB - By finding surface antigen markers being positive specifically to cancer stem cells in acute lymphocytic leukemia, it is intended to provide a novel method for sorting and identifying cancer stem cells in acute lymphocytic leukemia with the use of the above markers and a kit therefor. By using surface antigen markers CD90 and CD110 as indications, cancer stem cells in T cell acute lymphocytic leukemia (T-ALL) are sorted. By using surface antigen markers CD9 or CD9 with CD90 as indications, cancer stem cells in B cell acute lymphocytic leukemia (B-ALL) are sorted.

© EPODOC / EPO

PN - WO2008149356 A1 20081211  
PD - 2008-12-11  
PA - UNIV RAMOT [IL]; OFFEN DANIEL [IL]; MELAMED ELDAD [IL]; BARZILAY RAN [IL]; BEN-ZUR TALY [IL]; BULVIK SHLOMO [IL]

IN - OFFEN DANIEL [IL]; MELAMED ELDAD [IL]; BARZILAY RAN [IL]; BEN-ZUR TAL  
[IL]; BULVIK SHLOMO [IL]  
TI - METHODS OF GENERATING DOPAMINERGIC CELLS AND USES THEREOF  
AB - An isolated mesenchymal stem cell expressing an exogenous polynucleotide is  
disclosed. The exogenous polynucleotide comprises a nucleic acid sequence encoding a LIM  
homeobox transcription factor 1 alpha (Lmx1a) polypeptide. Methods of generating same, uses of  
same and pharmaceutical compositions comprising same are also disclosed.

© EPODOC / EPO

PN - WO2008148105 A1 20081204  
PD - 2008-12-04  
PA - MEDISTEM LAB INC [US]; ICHIM THOMAS E [US]; MENG XIAOLONG [US];  
RIORDAN NEIL H [US]  
IN - ICHIM THOMAS E [US]; MENG XIAOLONG [US]; RIORDAN NEIL H [US]  
TI - ENDOMETRIAL STEM CELLS AND METHODS OF MAKING AND USING SAME  
AB - The invention provides pluripotent stem cells and methods for making and using  
pluripotent stem cells. Pluripotent stem cells, among other things, can differentiate into various cell  
lineages in vitro, ex vivo and in vivo. Pluripotent stem cells, among other things, can also be used to  
produce conditioned medium.

© EPODOC / EPO

PN - WO2008147057 A1 20081204  
PD - 2008-12-04  
PA - RNL BIO CO LTD [KR]; RA JEONG CHAN [KR]; HAN HAE JUNG [KR]; LEE HANG  
YOUNG [KR]; KIM HYO EUN [KR]  
IN - HAN HAE JUNG [KR]; LEE HANG YOUNG [KR]; KIM HYO EUN [KR]  
TI - COMPOSITION FOR TREATING ISCHEMIC LIMB DISEASE COMPRISING STEM  
CELLS DERIVED FROM ADIPOSE TISSUE  
AB - Disclosed herein is a cell therapeutic composition for treating ischemic limb diseases,  
more specifically, disclosed is a cell therapeutic composition for treating ischemic diseases, which  
contains adipose tissue-derived mesenchymal stem cells and sucrose or mannose as an excipient.  
The composition induces angiogenesis around closed blood vessels in the ischemic limb lesions, and  
thus is useful to treat ischemic diseases.

© EPODOC / EPO

PN - WO2008146992 A1 20081204  
PD - 2008-12-04  
PA - CHABIOTECH CO LTD [KR]; COLLEGE OF MEDICINE POCHON CHA [KR]; KIM  
GI-JIN [KR]; SHIN KYUNG-SUN [KR]; NA KYU-HWAN [KR]; CHUNG HYUNG-MIN [KR]  
IN - KIM GI-JIN [KR]; SHIN KYUNG-SUN [KR]; NA KYU-HWAN [KR]; CHUNG HYUNG-  
MIN [KR]  
TI - PROCESS FOR THE HIGH-PURITY ISOLATION OF MESENCHYMAL STEM  
CELLS DERIVED FROM PLACENTAL CHORIONIC PLATE MEMBRANE  
AB - The present invention provides a method for isolating mesenchymal stem cells  
derived from a placental chorionic plate membrane, the method including: (a) harvesting a chorionic  
plate membrane from a detached placenta; (b) harvesting cells present in the chorionic plate  
membrane obtained in step (a) by scraping; (c) adding a solution containing trypsin and  
ethylenediaminetetraacetate to the cells obtained in step (b) to perform an enzymatic reaction and  
adding a fetal bovine serum thereto to terminate the enzymatic reaction; and (d) centrifuging the  
reaction solution obtained in step (c) and culturing the obtained cells in a medium containing a fetal  
bovine serum and an antibiotic.

© EPODOC / EPO

PN - WO2008144820 A1 20081204  
PD - 2008-12-04

PA - UNIV MONASH [AU]; JENKIN GRAHAM [AU]; TROUNSON ALAN OSBORNE [AU]; WALLACE EUAN MORRISON [AU]; MOODLEY YUBEN [AU]; MANUELPILLAI URSULA [AU]; ILANCHERAN SIVAKAMI [AU]  
IN - JENKIN GRAHAM [AU]; TROUNSON ALAN OSBORNE [AU]; WALLACE EUAN MORRISON [AU]; MOODLEY YUBEN [AU]; MANUELPILLAI URSULA [AU]; ILANCHERAN SIVAKAMI [AU]  
TI - TREATMENT OF CHRONIC LUNG DISEASE  
AB - A method of cellular therapy for a lung disease or condition in a subject is disclosed, wherein the method involves the administration of multipotent epithelial stem cells derived from amnion tissue (AECs). In a particular application, the method is used for the treatment of lung diseases and conditions such as chronic lung diseases including chronic obstructive pulmonary disease (COPD), acute lung conditions such as acute respiratory distress syndrome (ARDS), and ventilator associated lung injury (VALI).

© EPODOC / EPO

PN - WO2008140296 A1 20081120  
PD - 2008-11-20  
PA - PANGENETICS B V [NL]; MEERS STEF [BE]  
IN - MEERS STEF [BE]  
TI - MEANS AND METHODS FOR ENHANCING DIFFERENTIATION OF HAEMATOPOIETIC PROGENITOR CELLS  
AB - The invention provides means and method for stimulating the production of differentiated haematopoietic cells in a culture comprising haematopoietic progenitor cells, lymphocytes (preferably T-cells) and monocytes/macrophages and/or dendritic cells. The methods involve among others culturing said cells or precursors thereof in the presence of a binding molecule specific for a co-stimulatory molecule expressed on said monocytes/macrophages and/or dendritic cells or said lymphocytes (preferably T-cells).

© EPODOC / EPO

PN - WO2008140141 A1 20081120  
PD - 2008-11-20  
PA - RNL BIO CO LTD [KR]; KANG KYUNG SUN [KR]; RA JUNG CHAN [KR]; SHIN IL SEOB [KR]; SEO JU YEON [KR]  
IN - KANG KYUNG SUN [KR]; RA JUNG CHAN [KR]; SHIN IL SEOB [KR]; SEO JU YEON [KR]  
TI - PHARMACEUTICAL COMPOSITION FOR PREVENTING AND TREATING LIVER FIBROSIS OR HEPATIC CIRRHOSIS COMPRISING MESENCHYMAL STEM CELL  
AB - Provided is a pharmaceutical composition for preventing and treating liver fibrosis and hepatic cirrhosis including a mesenchymal stem cell. The composition substitutes for a damaged liver cell, thereby recovering liver functions and reducing collagen fibrils deposited on the liver, and thus may be used for preventing and treating liver fibrosis or hepatic cirrhosis.

© EPODOC / EPO

PN - WO2008137641 A2 20081113  
PD - 2008-11-13  
PA - WHITEHEAD BIOMEDICAL INST [US]; ZHANG CHENGCHENG [US]; LODISH HARVEY [US]  
IN - ZHANG CHENGCHENG [US]; LODISH HARVEY [US]  
TI - EX VIVO EXPANSION OF HUMAN HEMATOPOIETIC STEM CELLS  
AB - Methods and kits for expanding the number of hematopoietic stem cells are provided. The methods comprise incubating cells in medium comprising isolated IGFBP-2 and an angiopoietin-like protein (Angpt1). Expanded HSCs are provided as well as culture media and kits for the expansion of human HSCs in a defined medium. Methods of administering expanded human HSCs to and individual are provided as well as methods of treating an individual by administering certain growth factors and cytokines.

© EPODOC / EPO

PN - WO2008137122 A2 20081113  
PD - 2008-11-13  
PA - SHILOH LAORATORIES INC [US]; PRIMIANO THOMAS [US]  
IN - PRIMIANO THOMAS [US]  
TI - INDUCING PREMATURE SENESENCE TO STABILIZE STEM CELL FEEDER LAYER CELLS

AB - The present invention provides stem cell feeder layer cell lines that contain are readily triggered to differentiation. The expression vector encodes the senescence-triggering factors (STFs) consisting of Cip/Kip, INK4A, Cy protein or ankyrin-binding protein motifs. Each expression vector also contains an inducible transcription regulation element for conditional expression of the STFs.

© EPODOC / EPO

PN - WO2008137115 A1 20081113  
PD - 2008-11-13  
PA - BRIGHAM & WOMENS HOSPITAL [US]; CRAWFORD KEITH W [US]  
IN - CRAWFORD KEITH W [US]  
TI - MULTIPOTENT STEM CELLS AND USES THEREOF

AB - The invention provides a quiescent stem cell having the capacity to differentiate into ectoderm, mesoderm and endoderm, and which does not express cell surface markers including MHC class I, MHC class II, CD44, CD45, CD13, CD34, CD49c, CD73, CD105 and CD90. The invention further provides a proliferative stem cell, which expresses genes including Oct-4, Nanog, Sox2, GDF3, P16INK4, BMI, Notch, HDAC4, TERT, Rex-1 and TWIST but does not express cell surface markers including MHC class I, MHC class II, CD44, CD45, CD13, CD34, CD49c, CD73, CD105 and CD90. The cells of the invention can be isolated from adult mammals, have embryonic cell characteristics, and can form embryoid bodies. Methods for obtaining the stem cells, as well as methods of treating diseases and differentiated the stem cells, are also provided.

© EPODOC / EPO

PN - WO2008136733 A1 20081113  
PD - 2008-11-13  
PA - ASCENDIA AB [SE]; BUSCH CHRISTER [SE]  
IN - BUSCH CHRISTER [SE]  
TI - METHOD AND MEANS FOR CULTURING OSTEOBLASTIC CELLS

AB - A method of culturing human or mammalian mesenchymal stem cells (MSC) or osteoblastic cells to form corresponding cell aggregates evenly distributed in the culturing medium having a reduced content of cells with fibroblast morphology comprises contacting MSC or OC with a water-soluble cellulose derivative over a period of from 1 day to one or two weeks. Also disclosed are a corresponding aggregates, a culture medium and a pharmaceutical composition, and uses of the aggregate, the culturing medium and the composition.

© EPODOC / EPO

PN - WO2008133904 A1 20081106  
PD - 2008-11-06  
PA - STOWERS INST FOR MEDICAL RES [US]; PERRY JOHN M [US]; LI LINHENG [US]; GRINDLEY JUSTIN C [US]  
IN - PERRY JOHN M [US]; LI LINHENG [US]; GRINDLEY JUSTIN C [US]  
TI - METHODS AND COMPOSITIONS FOR STEM CELL SELF-RENEWAL

AB - The present invention relates to methods for expanding a stem cell population. More particularly, the invention relates, inter alia, to methods and compositions for expanding a stem cell population, particularly a hematopoietic stem cell population.

© EPODOC / EPO

PN - WO2008133536 A2 20081106  
PD - 2008-11-06  
PA - AKADEMIA MEDYCZNA IM PIASTOW S [PL]; CEGIELSKI MAREK [PL]; BOCHNIA MAREK [PL]; CALKOSINSKI IRENEUSZ [PL]; DZIEWISZEK WOJCIECH [PL]  
IN - CEGIELSKI MAREK [PL]; BOCHNIA MAREK [PL]; CALKOSINSKI IRENEUSZ [PL]; DZIEWISZEK WOJCIECH [PL]  
TI - NEW STEM CELL LINES, THEIR APPLICATION AND CULTURE METHODS  
AB - New lines of stem cells from the growing antlers of deer (Cervidae) and the application of said cells in the reconstruction of connective tissue, preferentially bone, cartilage or adipose tissue, in humans and animals; as well as a method of culturing them and the application of tissues from growing deer antlers in the production of the MIC-1 stable stem cell line.

© EPODOC / EPO

PN - WO2008132722 A1 20081106  
PD - 2008-11-06  
PA - UNIV RAMOT [IL]; PITARU SANDU [IL]  
IN - PITARU SANDU [IL]  
TI - PLURIPOTENT AUTOLOGOUS STEM CELLS FROM ORAL MUCOSA AND METHODS OF USE  
AB - The present invention provides a new readily accessible source of adult somatic stem cells from the lamina propria of the gastrointestinal tract in general and oral mucosa in particular, methods for isolating pluripotent stem cells from the lamina propria of oral mucosa, cells derived therefrom and uses thereof.

© EPODOC / EPO

PN - US2008305107 A1 20081211  
PD - 2008-12-11  
IN - BERGSTEIN IVAN [US]  
TI - NOVEL METHODS OF CANCER DIAGNOSIS AND THERAPY TARGETED AGAINST A CANCER STEM LINE  
AB - Improved methods for treatment of cancer which involve the targeting of slow-growing, relatively mutationally-spared cancer stem line are provided. These methods are an improvement over previous cancer therapeutic methods because they provide for very early cancer treatment and reduce the likelihood of clinical relapse after treatment.

© EPODOC / EPO

PN - WO2009092005 A2 20090723  
PD - 2009-07-23  
PA - DAVID GLADSTONE INST [US]; SRIVASTAVA DEEPAK [US]; IVEY KATHRYN NICOLE [US]  
IN - SRIVASTAVA DEEPAK [US]; IVEY KATHRYN NICOLE [US]  
TI - METHODS OF GENERATING CARDIOMYOCYTES AND CARDIAC PROGENITORS AND COMPOSITIONS  
AB - The present disclosure provides methods of inducing cardiomyogenesis in a stem cell or progenitor cell, or in a population of stem cells or progenitor cells; and methods for expansion of (increasing the numbers of) cardiac progenitors. Cell compositions are also provided.

**EMBRYONIC STEM CELLS- 15 documents**

© EPODOC / EPO

PN - US2008311625 A1 20081218  
PD - 2008-12-18  
IN - GENNERO LUISA [IT]; PONZETTO ANTONIO [IT]; SAVARINO ANDREA [IT]

TI - Immortal Pluripotent Stem Cell Line, Cell Lines Derived Therefrom, Methods of Preparing Thereof and Their Uses  
AB - The present invention relates to immortal pluripotent stem cells derived from a human leukaemia cell line, preferably a human monocytoid cell line and more preferably the human monocytoid cell line, THP1. The present invention further relates to cell lines derived from the immortal pluripotent stem cell line having the phenotype of cell strains characteristic of human tissues, particularly having a human hepatocyte phenotype, as well as the methods for preparing thereof. The present invention further relates to the use of the derived cell line with a human hepatocytic phenotype for the production of albumin and blood coagulation factors.

© EPODOC / EPO

PN - WO2008153231 A1 20081218  
PD - 2008-12-18  
PA - CHABIOTECH CO LTD [KR]; COLLEGE OF MEDICINE POCHON CHA [KR]; CHUNG HYUNG-MIN [KR]; MOON SUNG-HWAN [KR]; KIM JU-MI [KR]; LEE SOO-HONG [KR]  
IN - CHUNG HYUNG-MIN [KR]; MOON SUNG-HWAN [KR]; KIM JU-MI [KR]; LEE SOO-HONG [KR]  
TI - PROCESS FOR ISOLATING VASCULAR ENDOTHELIAL CELLS FROM EMBRYOID BODIES DIFFERENTIATED FROM EMBRYONIC STEM CELLS  
AB - The present invention provides a process for isolating vascular endothelial cells from embryoid bodies differentiated from embryonic stem cells, which comprises: (a) treating embryoid bodies differentiated from embryonic stem cells with 0.005 - 0.015% trypsin and 0.05 - 0.15 mM ethylenediaminetetraacetate (EDTA) to obtain vascular endothelial cell clusters; and (b) treating the vascular endothelial cell clusters with 0.1 - 0.5% trypsin and 0.5 - 2 mM EDTA so as to separate the vascular endothelial cell clusters into single cells.

© EPODOC / EPO

PN - WO2008151390 A1 20081218  
PD - 2008-12-18  
PA - AUSTRALIAN STEM CELL CT LTD [AU]; ELEFANTY ANDREW [AU]; STANLEY EDUOARD [AU]; NG ELIZABETH  
IN - ELEFANTY ANDREW [AU]; STANLEY EDUOARD [AU]; NG ELIZABETH  
TI - DIFFERENTIATION OF HUMAN EMBRYONIC STEM CELLS  
AB - The present invention provides a method for detecting hematopoietic progenitor cells in a population of cells comprising differentiating pluripotent cells, the method comprising detecting the presence of PDGFR $\alpha$  on the surface of cells in said population, wherein the presence of PDGFR $\alpha$  is indicative of hematopoietic progenitor cells.

© EPODOC / EPO

PN - WO2008151386 A1 20081218  
PD - 2008-12-18  
PA - AUSTRALIAN STEM CELL CT LTD [AU]; ELEFANTY ANDREW [AU]; STANLEY EDUOARD [AU]; NG ELIZABETH  
IN - ELEFANTY ANDREW [AU]; STANLEY EDUOARD [AU]; NG ELIZABETH  
TI - MEGAKARYOCYTE DIFFERENTIATION  
AB - The present invention provides a method for generating megakaryocytes and/or megakaryocyte precursors from a population of embryonic stem cells (ESCs), the method comprising: (i) culturing ESCs in a serum-free, stromal/feeder cell-free medium for a time and under conditions sufficient for formation of mesoderm and/or mesendoderm; and (ii) differentiating the cells cultured in step (i) in a medium comprising thrombopoietin (TPO), stem cell factor (SCF) and interleukin 3 (IL-3), or any functional fragment, variant or mimetic of TPO, SCF and/or IL-3, for a time and under conditions sufficient for formation of megakaryocytes and/or megakaryocyte precursors.

© EPODOC / EPO

PN - WO2008144580 A2 20081127

PD - 2008-11-27  
PA - UNIV OREGON HEALTH & SCIENCE [US]; MITALIPOV SHOUKHRAT M [US]; WOLF DON P [US]; BYRNE JAMES [US]  
IN - MITALIPOV SHOUKHRAT M [US]; WOLF DON P [US]; BYRNE JAMES [US]  
TI - PRIMATE STEM CELLS PRODUCED BY SOMATIC CELL NUCLEAR TRANSFER  
AB - Purified totipotent stem cells and pluripotent stems cells derived by somatic cell nuclear transfer are disclosed herein, as well as cell lines, multipotent cells and differentiated cells produced from these stem cells. The stem cells are produced from an enucleated host cell from a first donor and nuclear genetic material from a somatic cell of a second donor. Methods for making and using such compositions of such stem cells are also provided

© EPODOC / EPO

PN - WO2008150498 A1 20081211  
PD - 2008-12-11  
PA - UNIV GEORGIA [US]; STICE STEVEN [US]; BOYD NOLAN [US]  
IN - STICE STEVEN [US]; BOYD NOLAN [US]  
TI - HUMAN EMBRYONIC STEM CELL DERIVED MESODERM-LIKE EPITHELIUM TRANSITIONS TO MESENCHYMAL PROGENITOR CELLS  
AB - Human embryonic stem cells (hESC) have the potential to produce all of the cells in the body. They are also able to self-renew indefinitely, sparking the hope they could be used as a source for large scale production of therapeutic cell lines. The present invention relates to a monolayer differentiation culture system that induces hESC (WA09 and BG01) to form epithelial sheets with mesodermal gene expression patterns (BMP4, RUNXI, GAT A4). These E-cadherin+ CD90lovv cells then undergo apparent epithelial-mesenchymal transformation (EMT) for the derivation of mesenchymal progenitor cells (hES-MC) that by flow cytometry are negative for hematopoietic (CD34, CD45 and CD 133) and endothelial (CD31 and CD 146) markers, but positive for markers associated with mesenchymal stem cells (MSC) (CD73, CD90, CD105 and CD166). To determine their functionality, we tested their capacity to produce the three lineages commonly associated with MSC and found they could form osteogenic and chondrogenic, but not adipogenic lineages. The derived hES-MC were able to remodel and contract collagen I lattice constructs to an equivalent degree as keloid fibroblast control cells and were induced to express aSMA when exposed to TGF-ss1, but not PDGF-B. This data suggests the derived hES-MC cells are multipotent cells with potential uses in tissue engineering/regenerative medicine and for providing a highly reproducible cell source for adult-like progenitor cells.

© EPODOC / EPO

PN - US2008305546 A1 20081211  
PD - 2008-12-11  
IN - BAUER HANS-CHRISTIAN [AT]; TEMPFER HERBERT [AT]  
TI - Method for cultivating tendon cells from pluripotent cells of mesenchymal origin  
AB - A method for cultivating tendon cells from non-embryonic pluripotent cells of mesenchymal origin is described, wherein the isolated cells are cultivated in a culture medium under standard culture conditions in a culture vessel. In order to increase the collagen secretion, it is proposed that before their complete confluence, the cells are on the one hand further cultivated in a culture medium mixed with ascorbic acid and/or ascorbic acid-2-phosphate in a concentration of 25 to 75 mug/ml and on the other hand, subjected to hyperosmolar treatment in a culture medium whose osmolarity is adjusted to 350 to 500 mosmol/l.

© EPODOC / EPO

PN - WO2008150030 A1 20081211  
PD - 2008-12-11  
PA - FUKUDA KEIICHI [JP]; YUASA SHINSUKE [JP]; SHIMOJI KENICHIRO [JP]  
IN - FUKUDA KEIICHI [JP]; YUASA SHINSUKE [JP]; SHIMOJI KENICHIRO [JP]  
TI - METHOD OF INDUCING DIFFERENTIATION INTO MYOCARDIAL CELLS USING G-CSF

AB - A method of inducing the differentiation of ES cells into myocardial cells which comprises bringing the ES cells into contact with a G-CSF receptor agonist.

© EPODOC / EPO

PN - WO2008149807 A1 20081211  
PD - 2008-12-11  
PA - UNIV KUMAMOTO [JP]; KUME SHOEN [JP]; SHIRAKI NOBUAKI [JP]; UMEDA KAHOKO [JP]; KUME KAZUHIKO [JP]  
IN - KUME SHOEN [JP]; SHIRAKI NOBUAKI [JP]; UMEDA KAHOKO [JP]; KUME KAZUHIKO [JP]  
TI - METHOD FOR INDUCTION OF DIFFERENTIATION OF ES CELL  
AB - The object is to establish a system for differentiating an ES cell into a hepatocyte in a reliable manner. Specifically disclosed is a method for inducing the differentiation of an ES cell derived from a mammal into a hepatocyte, which comprises the step of culturing the ES cell in the presence of an M15 cell and in the co-presence of activin and bFGF and further culturing the ES cell in the presence of dexamethasone, HGF and oncostatin M.

© EPODOC / EPO

PN - WO2008148938 A1 20081211  
PD - 2008-12-11  
PA - RAJALA KRISTIINA [FI]; SUURONEN MARJO-RIITTA [FI]; HOVATTA OUTI [FI]; SKOTTMAN HELI [FI]  
IN - RAJALA KRISTIINA [FI]; SUURONEN MARJO-RIITTA [FI]; HOVATTA OUTI [FI]; SKOTTMAN HELI [FI]  
TI - FORMULATIONS AND METHODS FOR CULTURING EMBRYONIC STEM CELLS  
AB - The present invention relates to a serum replacement formulation and to a culture medium suitable for the maintenance and derivation of embryonic stem cells.

© EPODOC / EPO

PN - US2008299548 A1 20081204  
PD - 2008-12-04  
IN - YAMANAKA SHINYA [JP]  
TI - Gene Expressed Specifically in Es Cells and utilization of the Same  
AB - The present invention relates to an ES cell detection marker containing a polynucleotide derived from any one of ECAT15-1 gene, ECAT15-2 gene, ECAT16 gene, Rnf17 gene and LOC380905(TDRD4) gene.

© EPODOC / EPO

PN - WO2008145788 A1 20081204  
PD - 2008-12-04  
PA - FUNDACION PROGRESO Y SALUD [ES]; MENENDEZ BUJAN PABLO [ES]; CORTES ROMERO JOSE LUIS [ES]; COBO MARTINEZ FERNANDO [ES]  
IN - MENENDEZ BUJAN PABLO [ES]; CORTES ROMERO JOSE LUIS [ES]; COBO MARTINEZ FERNANDO [ES]  
TI - METHOD FOR ISOLATION OF THE INNER CELL MASS IN MAMMAL BLASTOCYSTS  
AB - Method for isolation of the inner cell mass (MCI) in mammal blastocysts which includes direct slide culture of said blastocysts and the subsequent ablation by laser of the trophoectoderm of said blastocysts. The method of the invention allows for an improvement in the efficiency of the isolation of the inner cell mass of blastocysts and exploitation of low-quality blastocysts which are not suited for separation of the inner cell mass by means of the methods described in the prior art documents.

© EPODOC / EPO

PN - WO2008137629 A2 20081113  
PD - 2008-11-13  
PA - REGENERON PHARMA [US]; WEI YI [US]; MACDONALD LYNN [US]; LIN HSIN CHIEH [US]  
IN - WEI YI [US]; MACDONALD LYNN [US]; LIN HSIN CHIEH [US]  
TI - IDENTIFYING GERMLINE COMPETENT EMBRYONIC STEM CELLS  
AB - Methods and compositions for selecting ES cells that are germline competent are provided, including gene expression arrays of from one to about 300 or more genes. Selecting ES cells that are competent for germline transmission by comparing the expression of one or more genes between an ES cell that is competent at germline transmission with an ES cell of interest is described. Selecting ES cells likely to be competent at germline transmission, based on their level of expression of gtl2, is also described.

© EPODOC / EPO

PN - WO2008134522 A1 20081106  
PD - 2008-11-06  
PA - HARVARD COLLEGE [US]; EGGAN KEVIN [US]; EGLI DIETER [US]  
IN - EGGAN KEVIN [US]; EGLI DIETER [US]  
TI - DERIVING EMBRYONIC STEM CELLS  
AB - In certain embodiments, the present disclosure provides methods and compositions useful for the generation a transgenic cell comprising transfer of nuclear-derived genetic material from a donor cell into a fertilized zygote or a blastomere from which nuclear- derived genetic material has been removed. Also disclosed are methods and compositions for the generation of pluripotent transgenic embryonic stem cells and transgenic animals, as well as methods of using such transgenic embryonic stem cells and transgenic animals for disease modeling, drug screening and/or cell replacement therapy.

© EPODOC / EPO

PN - WO2009036982 A1 20090326  
PD - 2009-03-26  
PA - CELLARTIS AB [SE]; SARTIPY PETER [SE]; AAKESSON KAROLINA [SE]; AMEEN CAROLINE [SE]; SYNNERGREN JANE [SE]; DAHLENBORG KERSTIN [SE]; STEEL DANIELLA [SE]  
IN - SARTIPY PETER [SE]; AAKESSON KAROLINA [SE]; AMEEN CAROLINE [SE]; SYNNERGREN JANE [SE]; DAHLENBORG KERSTIN [SE]; STEEL DANIELLA [SE]  
TI - CARDIOMYOCYTE-LIKE CELL CLUSTERS DERIVED FROM HBS CELLS  
AB - A cluster comprising cardiomyocyte-like cells, wherein the cluster has i) contracting cells, ii) cells that are electrically connected, and expresses iii) cardiac markers including Nkx.2.5, troponin and myosin, iv) markers for functional adrenergic receptors, v) markers for functional muscarinic receptors, vi) markers for functional ion-channels including hERG, Na<sup>+</sup>, Ca<sup>2+</sup> and K<sup>+</sup> channels, vii) one or more endodermal markers selected from the group consisting of AFP, TF, APOA2, AHSG, SERPINA1, APOA1, APOC3, TTR1 APOB, and RBP4. A method for preparing the clusters and the use of the clusters in drug discovery and toxicity screenings are described.

**INDUCED PLURIPOTENT CELLS/ DEDIFFERENTIATION OF CELLS- 2 documents**

© EPODOC / EPO

PN - WO2008151058 A2 20081211  
PD - 2008-12-11  
PA - (A2 A3)  
GEN HOSPITAL CORP [US]; HOCHEDLINGER KONRAD [US]; MAHERALI NIMET [US]  
IN - (A2 A3)  
HOCHEDLINGER KONRAD [US]; MAHERALI NIMET [US]  
TI - (A2 A3)  
METHODS OF GENERATING PLURIPOTENT CELLS FROM SOMATIC CELLS

AB - (A2 A3)

Disclosed herein are methods to select for the generation of mouse and human pluripotent stem cells during developmental reprogramming. The methods described herein relate to the selection of induced pluripotent stem cells, i.e., pluripotent stem cells generated or induced from differentiated cells without a requirement for genetic selection. Described herein are particular embodiments for selection of reprogrammed cells based on 1) colony morphology, or 2) X chromosome reactivation in female cells.

© EPODOC / EPO

PN - US2008274914 A1 20081106

PD - 2008-11-06

PA - SHINYA YAMANAKA [JP]; DAINIPPON SUMITOMO PHARMA CO [JP]

IN - YAMANAKA SHINYA [JP]

TI - Screening Method for Somatic Cell Nuclear Reprogramming Substance

AB - The present invention provides a screening method for somatic cell nuclear reprogramming substances, which comprises (a) a step for bringing into contact with each other a somatic cell comprising a gene wherein a marker gene is present at a position permitting expression control by the expression control region of an ECAT gene, and a test substance, and (b) a step following the aforementioned step (a), for determining the presence or absence of the emergence of cells expressing the marker gene, and selecting a test substance allowing the emergence of the cells as a somatic cell nuclear reprogramming substance candidate, and the like.

### **GRANTED PATENTS- PUBLISHED "B" SPECS**

#### **ADULT STEM CELLS- 6 documents**

© EPODOC / EPO

PNFP - EP1748066 B1 2008123

GRANTED- 2008-12-31

PA - STIFTUNG CAESAR [DE]; SIEMONSMEIER JUERGEN DR [DE]; UNIV BONN [DE]

IN - SIEMONSMEIER JUERGEN DR [DE]; DEGISTIRICI OEZER DR [DE]; THIE

MICHAEL DR [DE]; GOETZ WERNER PROF DR [DE]

TI - Method for isolating stem cells from a pad-like tissue of teeth

AB - The invention relates to a method for isolating non-embryonic stem cells from a tissue that is located in immediate vicinity of immature, developing teeth or wisdom teeth. The invention further relates to non-embryonic stem cells derived from said tissue. The method according to the invention utilises a living soft tissue residing underneath the dental papilla 12 in immediate vicinity of the apical side of a developing tooth, which is clearly distinguished from other tooth tissue, such as dental papilla 12 or follicle. The pad-like tissue 16 can only be detected in a defined, specific developmental stage in an early phase of root formation. That is, identifying and separating the pad-like tissue 16 is only possible from the appearance of the bony alveolar fundus to the end of the formation of the root of the tooth.

© EPODOC / EPO

PNFP - US7468276 B2 20081223

GRANTED- 2008-12-23

PA - ANTHROGENESIS CORP [US]

IN - HARIRI ROBERT J [US]

TI - Placental stem cells

AB - The present invention provides a method of extracting and recovering embryonic-like stem cells, including, but not limited to pluripotent or multipotent stem cells, from an exsanguinated human placenta. A placenta is treated to remove residual umbilical cord blood by perfusing an exsanguinated placenta, preferably with an anticoagulant solution, to flush out residual cells. The residual cells and perfusion liquid from the exsanguinated placenta are collected, and the embryonic-

like stem cells are separated from the residual cells and perfusion liquid. The invention also provides a method of utilizing the isolated and perfused placenta as a bioreactor in which to propagate endogenous cells, including, but not limited to, embryonic-like stem cells. The invention also provides methods for propagation of exogenous cells in a placental bioreactor and collecting the propagated exogenous cells and bioactive molecules therefrom.

© EPODOC / EPO

PNFP - US7468277 B2 20081223  
GRANTED- 2008-12-23  
PA - CORNELL RES FOUNDATION INC [US]; JAPAN SCIENCE & TECH CORP [JP]  
IN - GOLDMAN STEVEN A [US]; OKANO HIDEYUKI [JP]  
TI - Enriched preparation of human fetal multipotential neural stem cells  
AB - The present invention relates to a method of separating multipotential neural progenitor cells from a mixed population of cell types. This method includes selecting a promoter which functions selectively in the neural progenitor cells, introducing a nucleic acid molecule encoding a fluorescent protein under control of said promoter into all cell types of the mixed population of cell types, allowing only the neural progenitor cells, but not other cell types, within the mixed population to express said fluorescent protein, identifying cells of the mixed population of cell types that are fluorescent, which are restricted to the neural progenitor cells, and separating the fluorescent cells from the mixed population of cell types, wherein the separated cells are restricted to the neural progenitor cells. The present invention also relates to an isolated human musashi promoter and an enriched or purified preparation of isolated multipotential neural progenitor cells.

© EPODOC / EPO

PNFP - US7470537 B2 20081230  
GRANTED- 2008-12-30  
IN - HEDRICK MARC H [US]; KATZ ADAM J [US]; LLULL RAMON [ES]; FUTRELL J WILLIAM [US]; BENHAIM PROSPER [US]; LORENZ HERMANN PETER [US]; ZHU MIN [US]  
TI - Adipose-derived stem cells and lattices  
AB - The present invention provides adipose-derived stem cells (ADSCs), adipose-derived stem cell-enriched fractions (ADSC-EF) and adipose-derived lattices, alone and combined with the ADSCs of the invention. In one aspect, the present invention provides an ADSC substantially free of adipocytes and red blood cells and clonal populations of connective tissue stem cells. The ADSCs can be employed, alone or within biologically-compatible compositions, to generate differentiated tissues and structures, both in vivo and in vitro. Additionally, the ADSCs can be expanded and cultured to produce molecules such as hormones, and to provide conditioned culture media for supporting the growth and expansion of other cell populations. In another aspect, the present invention provides a adipose-derived lattice substantially devoid of cells, which includes extracellular matrix material from adipose tissue. The lattice can be used as a substrate to facilitate the growth and differentiation of cells, whether in vivo or in vitro, into anlagen or even mature tissues or structures.

© EPODOC / EPO

PNFP - US7459600 B2 20081202  
GRANTED- 2008-12-02  
PA - UNIV EDINBURGH [GB]  
IN - SMITH AUSTIN GERARD [GB]; MOUNTFORD PETER SCOTT [AU]  
TI - ISOLATION, SELECTION AND PROPAGATION OF ANIMAL TRANSGENIC STEM CELLS  
AB - Animal stem cells are obtained and maintained by culturing cells containing, in the genome, a selectable marker. Differential expression of the selectable marker enables preferential survival and/or division of the desired stem cells compared to the non-stem cells.

© EPODOC / EPO

PNFP - US7504103 B2 20090317  
GRANTED- 2009-03-17

IN	-	BERGSTEIN IVAN [US]
TI	-	Methods of cancer diagnosis and therapy targeted against a cancer stem line
AB	-	Improved methods for treatment of cancer which involve the targeting of slow-growing, relatively mutationally-spared cancer stem line are provided. These methods are an improvement over previous cancer therapeutic methods because they provide for very early cancer treatment and reduce the likelihood of clinical relapse after treatment.

## **EMBRYONIC STEM CELLS**

**No additional documents**

## **INDUCED PLURIPOTENT CELLS/ DEDIFFERENTIATION OF CELLS**

**No additional documents**

## **Search strategy: Mop up search**

This search provides those documents not found during the original search due to unavailable abstracts, documents not being classified, or unusual keywords used in the abstracts. The search strategy is provided and the new keywords will be used in the subsequent patentwatch searches.

.his

Databases : EPODOC, WPI

SS Results

```

1 8529 /EC/ECNO OR C12N5/06B2P, C12N5/06B3, C12N5/06B6P, C12N5/06B
    8P, C12N5/06B11P, C12N5/06B12P, C12N5/06B14P, C12N5/06B18P,
    C12N5/06B20P, C12N5/06B21P, C12N5/06B22P, C12N5/06B26P, C1
    2N5/06B28P, C12N5/06B30P, C12N5/06B3A
2 8263 *M4/PR/ALL
3 7993 *M4/PR/ALL
4 4508 *M4/PR/ALL
5 0 *M4/PR/ALL
6 0 *M4/PR/ALL
7 0 *M4/PR/ALL
8 2 *M4/PR/ALL
9 12658 1: 8
10 8288 9 AND (STEM? OR PLURIPOTEN+ OR PROGENITOR? OR EMBRYO+ OR HB
    S OR BLASTOCYST? OR RE_PROGRAM+ OR DE_DIFFERENTIAT+ OR RETR
    O_DIFFERENTIAT+ OR ?ESC?)
11 31620 ((STEM? OR PLURIPOTEN+ OR EMBRYONIC+ OR PROGENITOR? OR EMBR
    YONAL+ OR HBS OR BLASTOCYST? OR DE_DIFFERENTIAT+ OR RETRO_D
    IFFERENTIAT+ OR ?ES OR RE_PROGRAM+) 3D CELL?) OR (HESC? OR
    (HUMAN W ESC?) OR (PRIMATE W ESC?))
12 34879 1 OR 10 OR 11
13 34879 ..LIM 12
14 606 PD<=2008-12-19 AND PD>2008-10-31
15 440 14 AND (OR GB/PN, EP/PN, WO/PN, US/PN)
16 7 /PN GB S B? S (OR 200811, 200812)
17 47 /PN EP S B? S (OR 200811, 200812)
18 123 /PN US S B? S (OR 200811, 200812)
19 176 16 OR 17 OR 18
20 842 PD<=2009-02 AND PD>2008-12-19
21 584 20 AND (OR GB/PN, EP/PN, WO/PN, US/PN)
22 2 /PN GB S B? S (OR 200901, 200902)
23 54 /PN EP S B? S (OR 200901, 200902)
24 85 /PN US S B? S (OR 200901, 200902)
25 140 22 OR 23 OR 24
26 4999 PD<=2009-04 AND PD>2008-02-28
27 797 PD<=2009-04 AND PD>2009-02-28
28 541 27 AND (OR GB/PN, EP/PN, WO/PN, US/PN)
29 10 /PN GB S B? S (OR 200903, 200904)
30 33 /PN EP S B? S (OR 200903, 200904)
31 113 /PN US S B? S (OR 200903, 200904)
32 156 29 OR 30 OR 31
33 735 PD<=2009-06 AND PD>2009-04-30
34 516 33 AND (OR GB/PN, EP/PN, WO/PN, US/PN)

```

35 0 /PN GB S B? S (OR 200905, 200906)  
36 26 /PN EP S B? S (OR 200905, 200906)  
37 121 /PN US S B? S (OR 200905, 200906)  
38 147 36 OR 37  
39 645 PD<=2009-08 AND PD>2009-06-30  
40 457 39 AND (OR GB/PN, EP/PN, WO/PN, US/PN)  
41 0 /PN GB S B? S (OR 200907, 200908)  
42 42 /PN EP S B? S (OR 200907, 200908)  
43 99 /PN US S B? S (OR 200907, 200908)  
44 140 42 OR 43  
45 559 PD<=2009-10 AND PD>2009-08-31  
46 475 45 AND (OR GB/PN, EP/PN, WO/PN, US/PN)  
47 7 /PN GB S B? S (OR 200909, 200910)  
48 52 /PN EP S B? S (OR 200909, 200910)  
49 141 /PN US S B? S (OR 200909, 200910)  
50 198 47 OR 48 OR 49