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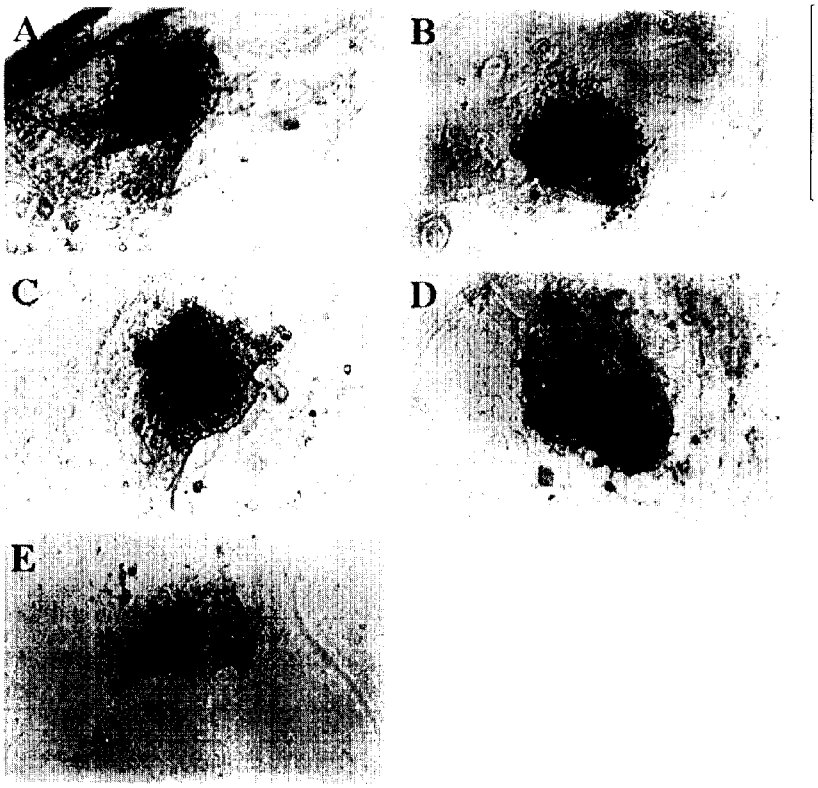
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(54) Title: COMPOSITIONS FOR THE IN VITRO DERIVATION AND CULTURE OF EMBRYONIC STEM (ES) CELL LINES WITH GERMLINE TRANSMISSION CAPABILITY



(57) Abstract: The present invention describes novel compositions for deriving, maintaining and growing pluripotent and germ-line competent mammalian embryonic stem cells. The compositions of this invention refers to compositions comprising a 1) conditioned medium of a cell line expressing limited amounts of Leukemia Inhibitory Factor (LIF), 2) conditioned medium from a cell line transfected with mammalian LIF and 3) a medium supplemented with recombinant rabbit LIF. The present invention describes novel compositions for deriving, maintaining and growing adult human stem cells and/or adult early progenitor cells, preferably under stroma free conditions and without added LIF and/or cytokines or growth factors. The media of the present invention are used or for the generation of pluripotent and germ line competent embryonic stem cells of mammals of which these cells were not obtained up to now. The media of the present invention are used or for the generation of adult human stem cells and/or adult early progenitor cells. The present invention is also directed to a novel rabbit LIF and to nucleotides encoding the Rabbit LIF and methods for the expression of recombinant rabbit LIF in the *Pichia pastoris* expression system.

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