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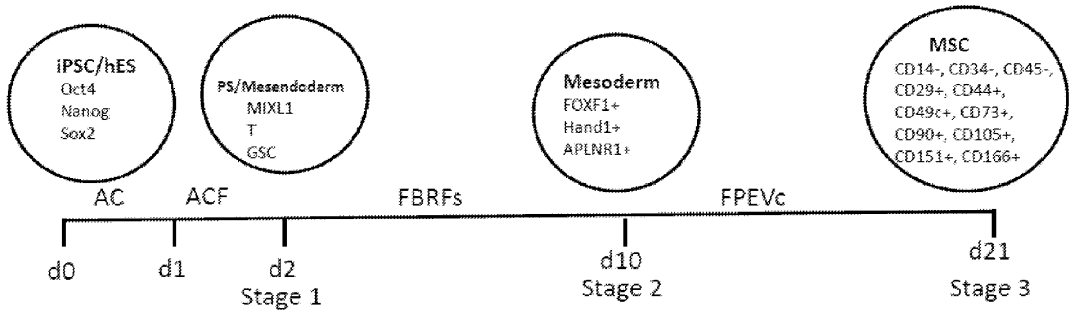
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(54) Title: METHOD OF GENERATING MESENCHYMAL STEM CELLS AND USES THEREOF



(57) Abstract: The present disclosure provides a method of generating mature mesenchymal stem cells (MSC) from lateral plate mesoderm comprising culturing the lateral plate mesoderm cells on an extracellular matrix in a MSC cell culture media comprising (i) fibroblast growth factor; (ii) platelet-derived growth factor (PDGF); (iii) epidermal growth factor (EGF) and (iv) ascorbic acid. Also claimed are MSCs obtained by said culture method and a method of treating cartilage and bone disease in a patient using said cells. In addition, a culture medium for deriving primitive streak mesendoderm cells from pluripotent stem cells comprising (a) activin; (b) WNT-signalling activator; and/or (c) fibroblast growth factor and a culture medium for deriving lateral plate mesoderm cells from primitive streak mesendoderm cells comprising (1) fibroblast growth factor; (2) bone morphogenetic protein; (3) follistatin; and optionally Rho-associated protein kinase (ROCK) inhibitor are claimed.

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