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(54) Title: MASS PRODUCTION OF HUMAN PLURIPOTENT STEM CELL DERIVED CARDIAC STROMAL CELL

(57) Abstract: The application describes a method for producing a population of cardiac stromal cells from pluripotent stem cells. Specifically, the method relates to (i) inducing epithelial-mesenchymal transition of pluripotent stem cell derived epicardial cells and (ii) amplifying the number of cardiac stromal cells in serum-free conditions. These cardiac stromal cells can be mass produced according to the described method and said cells maintain the expression of CD90, CD73 and CD44 in at least 80% of the cardiac stromal cells. Furthermore, the application relates to a population of cardiac stromal cells, which are pluripotent stem cells derived and wherein at least 80% of the cardiac stromal cells express CD90, CD73 and CD44. Said cardiac stromal form the basis for several *in vitro* and *in vivo* applications such as the production of engineered organ tissue and the support of, for example, heart repair. Also, a serum-free culture medium for the amplification of cardiac stromal cells is provided herein.



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