

Construction of recombinant plasmid pcDNA3.1/BMP-2 and its involvement in differentiation of human dental pulp-derived cells into an odontoblastic lineage / Hedijanti Joenoes, Mindia Yuniastuti, Endang W., Bachtiar, Boy M. Bachtiar

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Abstrak

Experimental studies have shown that dental pulp tissue has potential to regenerate dentine in response to adverse stimuli, such as caries and associated operative procedures. However, the potential of dental pulp regeneration seems to be limited by regenerative capacity of the cell involved. In this study, we report the effect of transfection of a recombinant plasmid containing human BMP-2 gene in proliferation and differentiation of dental pulp tissue in vitro. The regenerative capacity was analyzed by ALP production and calcium content. Results showed that the transfected dental pulp cell was able to differentiate into the odontoblast phenotype, indicating the presence of odontoblast progenitor cells in dental pulp tissue.