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# Odontogenic differentiation of induced pluripotent stem cells fromdental pulp stem cells

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The induced pluripotent stem cells (iPSC) have characteristics similar to embryonic stem cells, including capability of self-renewal, large-scale expansion and the ability to differentiate into all types of cells including germ cells, what defines pluripotency. Using iPSC avoid problems of immunological rejection and ethical controversy. The possible future uses of iPSC are diverse and go beyond the differentiation into somatic cells for regeneration of damaged tissues. In this study, we have generated iPSC from dental pulp stem cells (DPSC) using aelectroporation technology. We obtained a very low transfection efficiency (<0.01%) however the clones obtained were capable to survive and proliferate in feeder-free culture. Cells were induced to differentiate into mesenchymal stem cells via embroyd body formation and stimulated to differentiatiate into odontoblast cells *in vitro* using odontogenic induction medium. After 14 days, iPSC from DPSC were expressing odontogenicmarkers (DMP-1, DSPP and MEPE) and were capable to secrete mineralized compounds as shown by alizarin red staining.In conclusion, we have generated iPSC from DPSC using a non-viral approach that could differentiate express odontogenic markers under proper stimulation.

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