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Alkaline phosphatase and CD34 reaction of deciduous teeth pulp stem cells

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Abstract

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Endothelial progenitor cells from the pulp of milk teeth were isolated for use in clinical applications and tissue engineering. Normal deciduous teeth from children of 7 to 8 years of age, which more than half the tooth root was extracted, were selected from the dental centre. Cells from enzyme treated pulps were cultured and cells resulting from the fifth and eight subculture were combined for cell surface marker determination experiments. Cells were positive for CD34 marker with a total of 99/45%, determined by flowcytometry. Cells also demonstrated alkaline phosphatase (ALP) activity. From the developmental point of view, stem cells from the dental pulp seem to have derived from the neural crest, which our findings technically support this theory. In essence mobile progenitor cells from bone marrow of endothelial origin could also play a significant role in the derivation of dental pulp stem cells. © 2007 Asian Network for Scientific Information.

Author keywords

ALP activity; CD34; Deciduous teeth pulp stem cells; Endothelial progenitor cells

Indexed Keywords

EMTREE drug terms: alkaline phosphatase; CD34 antigen

EMTREE medical terms: article; biosynthesis; cell culture; cell line; cytology; endothelium cell; flow cytometry; human; immunohistochemistry; metabolism; methodology; neural crest; stem cell; tooth; tooth pulp

MeSH: Alkaline Phosphatase; Antigens, CD34; Cell Line; Cells, Cultured; Dental Pulp; Endothelial Cells; Flow Cytometry; Humans; Immunohistochemistry; Neural Crest; Stem Cells; Tooth
Medline is the source for the MeSH terms of this document.

Chemicals and CAS Registry Numbers: alkaline phosphatase, 9001-78-9; Alkaline Phosphatase, EC 3.1.3.1; Antigens, CD34

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