Title: Analysis of Low Molecular Proteins Obtained From Human Placental Extract Considered as a New Strategic Biomaterial for Pulp-Dentinal Regeneration

Abstract: Dental pulp infections and trauma to pulpal tissue could apparently cause inflammation and eventually cause regeneration of pulp in cellular level as process of physiological events. Pulp response to infection is similar to any other tissue response to infection in the body.

New methodologies explored in the field of regenerative dentistry involves grouping of growth factors, scaffolds and Mesenchymal Stem Cells.The generation of functional dentine by effective stimulation of odontoblast has not yet been achieved though there are numerous strategies have been employed in regenerative dentistry. Need for creating bioactive material that enables the pulpal tissue to heal itself instead of permanently removing the injured tissue and placing prostheses.

Human Placental Extract (HPE) was obtained by mechanical method from tissue of full term individual placenta. The pH of the solution was estimated to be favourable for osteogenesis. The protein depletion technique was employed in order to obtain low molecular weight proteins may contribute to the variation in obtaining potential proteins. HPE obtained was characterised after in-solution digestion and mass spectrometry. Ten proteins were identified out of which Multiple inositol polyphosphate phosphatase 1, DACT2, Proliferation marker protein Ki-67 and Zinc finger BED domain-containing protein 1 were of interest. The proteins of interest were either involved in cell proliferation directly or indirectly. Considering this information use of this extract on human dental pulp cell can be functional.