Efek Kitosan dibandingkan Deksametason pada diferensiasi Osteogenik sel punca pulpa gigi : ditinjau dari aktivitas enzim Alkaline Phosphatase = The effects of Chitosan compared to Dexamethasone in Osteogenic differentiation of dental pulp stem cells : analysed by Alkaline Phosphatase activity

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Abstrak

Kitosan dan deksametason merupakan material yang digunakan dalam rekayasa jaringan tulang. Kitosan biasa digunakan sebagai scaffold, sedangkan deksametason sering digunakan sebagai sinyal. Salah satu penanda diferensiasi osteoblas adalah Alkaline phosphatase (ALP). Penelitian ini bertujuan menganalisis efek kitosan dibandingkan deksametason dalam menginduksi diferensiasi osteoblas melalui aktivitas ALP pada sel punca pulpa gigi (SPPG). Aktivitas ALP dianalisis dengan ALP assay. Terdapat 4 perlakuan yang memiliki aktivitas ALP diatas kontrol, yakni kitosan 5 ng/ml, deksametason 10 nM dan 100 nM, serta campuran kitosan 5 ng/ml dan deksametason 10 nM. Peningkatan konsentrasi deksametason meningkatkan aktivitas ALP. Peningkatan konsentrasi kitosan menurunkan aktivitas ALP.
.....Chitosan and dexamethasone are materials that can be used in bone tissue engineering. Chitosan is often used as a scaffold, while dexamethasone is often used as signal. One of the markers of osteoblast differentiation is Alkaline phosphatase (ALP). This research objective is to analyse the effects of chitosan compared to dexamethasone in inducing osteoblast differentiation through ALP activity in Dental Pulp Stem Cells (DPSCs). ALP activity determined by ALP Assay. There were four treatments that have higher activity than the control, they are chitosan 5 ng/ml, 10 nM dexamethasone and 100 nM, and mixture of chitosan 5 ng/ml and 10 nM dexamethasone. The increased concentrations of dexamethasone increases ALP activity and the higher concentration of chitosan will decrease the ALP activity.