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Paper Title:	Development of Hair Follicle Dermal Papilla Spheroids Encapsulated in Alginate Hydrogel with Extracellular Matrix Protein
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Abstract

Hair follicles (HF) are important anatomical structures that are responsible for maintenance of the hair cycle. However, hair disease can affect the hair follicle directly with the modern treatment still riddled with side effects due to lack of full understanding of hair nature. The study aimed to investigate the effect of alginate hydrogel with extracellular matrix (ECM) protein encapsulation on activity of dermal papilla (DP) spheroids. The DP cells were aggregated to mimic its native spherical structure and introduced into alginate solution mixed with ECM. The mixture was then crosslinked with calcium chloride to form hydrogel. The encapsulation elevated alkaline phosphatase (ALP) activity, which is a DP molecular marker. This work demonstrates that DP encapsulation in alginate with ECM can manipulate DP spheroid activity.
