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Paper Title: Study of Cell Encapsulation System in using Thai Silk Fibroin-Based Hydrogel

Authors: Nitchaya Suksomthong (Chulalongkorn University, Thailand); Sasitorn Aueviriyavit (Nano Safety and Bioactivity Research Team, National Nanotechnology Center, Thailand); Juthamas Ratanavaraporn (Chulalongkorn University, Thailand)

Email: 6370106921@student.chula.ac.th

Abstract

Designing biomimetic tissue models and developing scaffolds under cell-compatible protocols are a challenge in the field of tissue engineering. Cell encapsulation technique was selected with hydrogel fabrication due to its similarity to the condition within the human body. This study proposed SF-based hydrogels with the aim of application as cell encapsulation matrix. The vital properties, including gelation, diffusion, and cell viability were evaluated. SF/DMPG hydrogels exhibited rapid gelation and sufficient diffusion. L929 cells encapsulated in SF/DMPG survived after the fabrication process, with proliferation occurred at day 1 of culture which was done in static condition. The hydrogels showed potential application as a cell encapsulation matrix using tissue engineering, especially bioink.
