ABSTRACT

EFFECT OF ALGINATE CONCENTRATION AND CROSSLINKING TIME ON RELEASE PROFILE OF OVALBUMIN FROM ALGINATE MICROSPHERES (Prepared by Ionotripic Gelation Method using Aerosolization Technique)

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This study investigated the main effect of alginate concentration and crosslinking time on release profile of ovalbumin from alginate microspheres. This research parameters were sodium alginate concentration of 1,5% w/v and 2,5%, and crosslinking time of 30 minutes and 120 minutes. Ovalbumin-alginate microspheres were characterized in terms of particle size, shape of microspheres, protein loading, entrapment efficiency, yield, and release profile of ovalbumin. A factorial design ANOVA and one way ANOVA of experiment was used as statistical analysis at a 95% confidence interval. Effect of increasing alginate concentration from 1,5% w/v to 2,5% w/v showed increase of protein loading, entrapment efficiency, and yield. Otherwise increasing of crosslinking time showed decrease of protein loading and entrapment efficiency from microsphere using 1,5% w/v alginate. From size particle examination, increasing alginate concentration showed decrease of size particle. From the result of SEM, it was known that the microspheres showed spherical shape with rough surface. Small particle size of ovalbumin-alginate microsphere was produced using this ionotropic gelation-aerosolization method. Increasing of alginate concentration showed decrease of release profile of ovalbumin.

Keywords: Microspheres, Ovalbumin, Alginate/Sodium Alginate, Ionotropic Gelation, Aerosolization, Crosslinking Time