

**ABSTRACT**

**PREPARED OF CHITOSAN NANOPARTICLES WITH  
MALTODEXTRIN AS CRYOPROTECTANT  
(Prepared by Ionic Gelation – Freeze Drying Method)**

The aim of this research is to determine the effect of centrifugation, freezing step with maltodextrin as cryoprotectant on chitosan nanoparticles formation. Nanoparticles was prepared by ionic gelation and dried by freeze drying. Nanoparticles which had made with ionic gelation was separated by centrifugation. The effect of speed and time for centrifugation, freezing temperature were also studied. The result showed that chitosan nanoparticles had spherical shape after centrifuge at 4000 rpm for 5 minutes and freeze dried at  $-30^{\circ}\text{C}$  for 1 hour. Otherwise, SEM image of dried nanoparticles showed that agregation formed after drying for 24 hours.

Keyword: nanoparticles, chitosan, maltodextrin, centrifugation, freeze drying.

