# Biocompatibility and Biodegradability of Electrolyzed Chitosan Products

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**ABSTRACT**

Chitosan posses the biochemical properties including biocompatibility, biodegradability, non-toxic and antiseptic function. Therefore, chitosan are used as biomedical materials. In this study, chitosan of various molecular weight were dissolved in acetic acid of 0.05 N to proceed electrolysis experiment. To estimate the feasibility of these chitosan products as biomedical materials, we investigated the biocompatibility and biodegradability of electrolyzed product. The test of biocompatibility consisted of blood and cell analysis. Platelet adsorption test was used for studying the compatibility of chitosan with blood. The compatibility of chitosan with cell was estimated by observing the multiplication of NIH/3T3 fibroblast on the surface of electrolyzed product. Furthermore, lysozyme extracted from egg white was used to test the biodegradability of chitosan. The results indicated that NIH/3T3 fibroblast gathered and multiplied on the films of chitosan with three different molecular weight. It presented all of them possessed good biocompatibility. Moreover, chitosan of molecular weight with 1,750 kDa possessed the best compatibility with blood. The biodegradability of chitosan increased as the chitosan molecular weight increased.

Keywords : chitosan ; electrolyzed product ; biocompatibility ; platelet ; fibroblast ; biodegradability ; lysozyme

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