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Hamidreza Gharibi, Amir Abdolmaleki



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Thermo-chemical modification of a natural biomembrane to induce mucoadhesion, pH sensitivity and anisotropic mechanical properties

Hamidreza Gharibi^a Amir Abdolmaleki^{a,b,*}

^a*Department of Chemistry, Isfahan University of Technology, Isfahan 84156-83111, I. R. Iran.*

^b*Department of Chemistry, College of Sciences, Shiraz University, Shiraz 71467-13565, Iran.*

E-mail address: abdolmaleki@cc.iut.ac.ir
amirabdolmaleki@yahoo.com (A. Abdolmaleki)

Corresponding author: Tel.: +98 3133913249; fax: +98 3133912350

Abstract

In the present study due to the distinctive mechanochemical/biological characteristics of natural biomembranes, we state the preparation, characterization and cytocompatibility of modified eggshell membrane (ESM) by citric acid (CA) for biomedical and pharmaceutical applications. FTIR spectroscopy and CHNS analysis demonstrated the successful reaction of ESM with CA. Also, successful modification of the ESM was observed by the change in thermogravimetric analysis. SEM micrographs of neat ESM and ESM-CA gave further insight into membranes morphology and revealed that aligned oriented fibrous frameworks were prepared using thermo-

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