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不同交联剂含量对戊二醛交联壳聚糖膜结构与性 能影响的研究

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摘要 仔细研究壳聚糖膜的结晶度、溶胀度及其对二价铜离子的吸附量与交联剂戊二醛含量(特别是在戊二醛含量较低时)的关系。结果发现膜的结晶度、溶胀度以及对铜离子的吸附量均在戊二醛摩尔分数为0.25%时达到极大值。结晶度的增大可归结于轻度交联能使壳聚糖分子链在成膜时排列更为有序；而溶胀度和对铜离子吸附量的增加则可认为是交联能使壳聚糖中原先被氢键作用所束缚的氨基获得了自由。

关键词 戊二醛 壳聚糖 吸附 溶胀 结晶度

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Influence of crosslinking agent content on structure and properties of glutaraldehyde crosslinked chitosan membranes

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Abstract the crystallinity, swelling ratio as well as Cu^2^+ adsorption capacity of glutaraldehyde crosslinked chitosan membranes have been studied. The glutaraldehyde content is varied from 0 to 5.0%. The lower glutaraldehyde content is, the smaller glutaraldehyde content interval changes. The results show that the crystallinity, swelling ratio and adsorption capacity reach the maximum when glutaraldehyde content in the membrane is 0.25%. This phenomenon is different from that reported in literatures which shows the crystallinity and swelling degree are decreased with an increase of glutaraldehyde content. It is suggested that low-level crosslinking might be favorable to a mre regular arrangement between chitosan molecular chains during membrane formation. Moreover, the increase of swelling ratio and adsorption capacity could be attributed to the increase of accessible amino group number while crosslinking taken palce.

Key words PENTANEDIAL CHITOSAN ADSORPTION SWELLING CRYSTALLINITY

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