

以過硫酸鉀降解幾丁聚醣之研究

Applications of chitosan are limited by their insolubility in neutral water and organic solvents. However, chitosan oligomers or low-molecular-weight chitosan can be dissolved in neutral solution and offer better biological activities, such that they are widely used in biomedical applications, food industry and agriculture, etc. In this study, potassium persulfate (KPS) was used to degrade chitosan, further facilitated by an acid environment. Molecular chain of chitosan was found to be degraded rapidly by an addition of a small amount of KPS. The degradation rate was increased with increasing the KPS amount or temperature. A reaction mechanism was proposed based on free radical degradation. According to this mechanism, a simple kinetic model was derived, where the degradation rate was found to be proportional to 0.40 power of KPS concentration.