عنوان مقاله:

Synthesis of biodegradable polymers composites (Chitosan, Cellulose, Starch) and its integration with coagulation compounds (Octenidine dihydrochloride and Nitrocellulose) formedical applications

محل انتشار:

سومین کنگره ملی شیمی و نانوشیمی از پژوهش تا فناوری (سال: 1399)

تعداد صفحات اصل مقاله: 12

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خلاصه مقاله:

The present investigation describes the synthesis and characterization of novel biodegradable nanoparticles based on chitosan (CS) for biomedical applications. (CS) is a natural polysaccharide that appears in several species of the mucorales fungi order and it is the second abundant biopolymer present on the earth after cellulose. (CS) as abiopolymer has numerous applications and uses. But, its mechanical, chemical and biological characteristics can be enhanced by modification of its chemical structures. Starch has a heterogeneous, semi-crystalline granular structure, and the degree of ordered structure can affect its behavior in foods and bioplastics. cellulose is the most abundantsource of natural polymer due to its unique properties including reproducibility, biodegradability, high mechanical properties, biocompatibility, and biocompatibility. so these are a good choice for modification of (CS) . In the present study, the in vitro effects of the common antiseptic octenidine dihydrochloride against 5 important bacteria were tested.This study was performed to investigate the physical and chemical properties and the biodegradability and antimicrobial properties of the composite of these biodegradable polymers. This research aimed to produce composite with high performance. chitosan at first extracted from shrimp and then starch extracted from potato and celluloseextracted from orange pulp and cotton. composites were prepared and subject to FT-IR, and then solubility and Rheological properties were tested. Several techniques are applied to characterize the structures and properties of composites such as SEM , XRD, DLS and standard test (Water Adsorption Analysis, Porosity Analysis, Degree ofDeacetylation). The results reaveld that the high elasticity in chitosan composite with starch compared to the chitosan and starch separately. The antibacterial tests suggested that all composites exhibited anti-bacterial capabilities, the highest level of which was associated with the Chitosan-Starch composite

کلمات کلیدی:

Chitosan, Starch, Cellulose, Biodegradable Polymers, Octenidine dihydrochloride, Nitrocellulose