

عنوان مقاله:

Antibacterial properties of biologically formed chitosan nanoparticles using aqueous leaf extract of *Ocimum basilicum*

محل انتشار:

مجله علوم نانو، دوره 3، شماره 4 (سال: 1395)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Iman Rasaee - *Department of Biotechnology, Imam Khomeini International University, Qazvin, Iran*

Maryam Ghannadnia - *Department of Biotechnology, Imam Khomeini International University, Qazvin, Iran*

Hosein Honari - *Center of Biosciences Research, Imam Hossein comprehensive University, Tehran, Iran*

خلاصه مقاله:

Objective(s): Chitosan nanoparticles (CNPs) were prepared based on the ionic gelation of chitoan with anionic compounds of *Ocimum basilicum* leaf extract. Materials and Methods: After addition of *Ocimum basilicum* leaf extract to chitosan solution, the physicochemical properties of the nanoparticles were determined by Field Emission Scanning Electron microscope (FESEM), Fourier Transform Infrared (FTIR) analysis, X-ray diffraction (XRD) Pattern, and Dynamic Light Scattering (DLS). The antibacterial activity of CNPs was evaluated by agar disc diffusion method. Results: The synthesized nanoparticles were found to be nearly spherical shape with size in the range of 135-729 nm. FTIR analysis revealed the presence of polyphenolic; proteins and alkaloids compounds act as effective agents for converting chitosan to CNPs. Moreover, the synthesized nanoparticles showed potent antibacterial activity against Gram positive and Gram negative bacteria. Conclusion: These results reveal that natural sources of materials such as plants could be used for preparation of CNPs instead of use of chemical substances.

کلمات کلیدی:

Biosynthesis, Chitosan nanoparticles, Leaf extract, *Ocimum basilicum*

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/893458>

