

عنوان مقاله:

Phytofabrication of Silver nanoparticles using Abrus precatorius L Seed extract and their antioxidant and antibacterial activity

محل انتشار:

مجله بین المللی ابعاد نانو، دوره 13، شماره 2 (سال: 1401)

تعداد صفحات اصل مقاله: 12

نویسندگان:

Murugeswaran Selvam - *Research Scholar* (۱۹۲۱۲۲۳۲۲۶۲۰۳۹), PG & Research Department of Botany, V. O. Chidambaram College, Thoothukudi, Tamil Nadu, India, Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

Pious Tresina - *Ethnopharmacology Unit, Research Department of Botany, V. O. Chidambaram College, Thoothukudi, Tamil Nadu, India*

Gnana Priyanka Beulah - *Research Scholar* (۱۸۱۱۲۲۳۲۲۶۲۰۰۹) PG & Research Department of Botany, V. O. Chidambaram College, Thoothukudi, Tamil Nadu, India

Veerabahu Mohan - *Ethnopharmacology Unit, Research Department of Botany, V. O. Chidambaram College, Thoothukudi, Tamil Nadu, India*

خلاصه مقاله:

The present investigation evaluates the potential of aqueous seed extract of Abrus precatorius L. for the biosynthesis of silver nanoparticles (AgNPs). The structure of AgNPs was authenticated by the changes in colour as well as the UV-vis spectroscopy, which showed an absorbance maxima peak at ۴۴۱ nm. The scanning electron microscope (SEM) investigation proved the particle shape as well as the X-ray diffraction (XRD) that validated the crystalline character of AgNPs. The AFM study also corroborated the surface morphology of manufactured AgNPs. Fourier Transform Infrared (FTIR) approved the presence of alcoholic, and the phenolic groups co-operated an imperative reduction role in the synthesis method. In vitro, the antioxidant action of both A. precatorius seed extract and AgNPs were scrutinized by DPPH assay. It illustrates the antibacterial activity against the gram negative bacteria Salmonella paratyphi as well as the Escherichia coli. Compared to other NPs, the AgNPs synthesized in this study were smaller in size that exhibited a higher level of antioxidant and antibacterial activity. From the consequences, it is proposed that green synthesized AgNPs could be employed successfully in future biomedical applications

کلمات کلیدی:

Abrus Precatorius, Antibacterial activity, DPPH Radical Scavenging, silver nanoparticles, X-ray diffraction

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1455131>



