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## Tecoma stans flower extract assisted biogenic synthesis of functional Ag-Talc nanostructures for antimicrobial applications(Article)

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### Abstract

Silver based functional nanomaterials receive increasing importance with the application potential for antimicrobial products. Among the various synthesis processes, plant extract mediated biosynthesis of functional nanostructures receives great attention due to their greener approach. In this perspective, the present investigation deals with the effective functionalization of talc with silver nanoparticles by employing Tecoma stans flower extract as the reducing/capping agent. The Ag-Talc nanostructure formation was confirmed using UV-Vis spectroscopy (characteristic peak at 440 nm) and X-ray diffraction (XRD) analysis (FCC Ag peak at 38°) with the crystallite size of ~57 nm. SEM-EDX analysis ensured the silver content of 0.52 wt% in talc. TEM images reveal the mean diameter of the Ag nanoparticles, which were found 50–60 nm. The synthesized Ag functionalized talc exhibits good antimicrobial activity against Staphylococcus aureus and Escherichia coli with the inhibition zone of 24 mm and 16 mm respectively. © 2019 Elsevier Ltd

### Author keywords

Antimicrobial activity [Bio reduction](#) [Flower extract](#) [Silver nanoparticles](#) [Talc](#)

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