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Green Synthesized Silver nanoparticles of *Spirulina Platensis* with their ability of Antibacterial activity

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Manish Pathak[1*], Prasanjit Paul[1], U.k Singh[1]

[1]Kharvel Subharti College of Pharmacy, Swami Vivekanand Subharti University, Meerut(U.P) INDIA

Address for Correspondence: editojohp@gmail.com

ABSTRACT:

Objective: The current study was aimed at economical and simple green synthesis of silver nanoparticles of *Spirulina platensis* without using any chemicals and silver nanoparticles tested as antibacterial agent.

Methods: Silver nanoparticles were synthesized by adding Silver nitrate with aq. extract of *Spirulina platensis* and subjected for 60 hrs continuous stirring at room temperature. Solution was filtered and centrifuged at 4000 rpm for 10 min. Collection of silver nanoparticles was done after washing and drying. Prepared silver nanoparticles of *Spirulina platensis* was tested as antibacterial agent on pathogens by disc diffusion method.

Results: Silver nanoparticles of *Spirulina platensis* was confirmed physically observed by the color change and characterized through UV-visible spectroscopy, FT-IR, TEM, XRD. Antibacterial properties of SNPs was studied on pathogens such *as Escherichia coli, Klebsiella pneumoniae, Staphylococcus aureus* and *Bacillus cereus* which shows extensive reduction in the growth rate of the pathogens.

Conclusion: Prepared silver nanoparticles were cost effective and show tremendous potential in the future production of other valuable nanostructures in the emerging field of medicine as antibacterial agent.

Keywords: *Spirulina platensis*, Green synthesis, Antibacterial agent

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