

Nanoformulation of Antifungal Drug(Fluconazole) and Their Evaluation for Improved Antifungal Activity



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By

Ms. CHAITRA M S

Ms. SHWETA MANDAVALLI

Ms. VARSHA R THOTA

Mr. HARISH M B

Under the guidance of

Mr. Samrat K.

Department of Biotechnology
MSRIT, Bangalore



**Department of Biotechnology
M. S. Ramaiah Institute of Technology
(Autonomous Institute, Affiliated to VTU)**

ABSTRACT

The present study is aimed to evaluate improved antifungal activity of commercially available antifungal drug fluconazole with silver nanoparticles stabilized with biocompatible polymer chitosan against human pathogen *Candida albicans* and *Trichophyton rubrum*. Silver nanoparticles were synthesized by chemical reduction of metal precursor with suitable reducer and stabilizer. Synthesized Silver nanoparticles are characterized by UV-Vis Spectroscopy, Fourier Transform Infrared Spectroscopy (FTIR) , X Ray Diffraction (XRD) and Scanning Electron Microscope (SEM). The UV-Vis peak at 397nm show the preliminary conformation of silver nanoparticles. Silver nanoparticles were conjugated with the fluconazole, stabilized with chitosan under optimum conditions and the synthesized nanodrug conjugate were characterized by FTIR. Antifungal activity of Silver nanodrug conjugate revealed improved activity by 2 to 20 folds against both the tested organism when compared to free antifungal agent. The present study would suggest the possible utilization of nanoformulated fluconazole as an effective antifungal agents against human pathogenic fungal organisms.