

SYNTESIS, CHARACTERIZATION & BIOLOGICAL ACTIVITES OF SILVER NANOPARTICLES IN TINOSPORA CORDIFOLIA & MENTHA ARVENSIS

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Nanotechnology deals with nano-meter sized objects. Living organisms are built of cells that are typically 10µm across. However, the cell parts are much smaller and are in sub-micron size domain. Even smaller are the proteins with typical size of just 5nm, which is comparable with the dimensions of smallest manmade nanoparticles. This simple size comparison gives an idea of using nanoparticles as probes that would allow us to understand the cellular machinery without introducing much interference. An eco- friendly approach for the preparation of silver Nanoparticles from silver nitrate solution using *Tinospora cordifolia* and *Mentha arvensis* leaf extract was investigated to give insight into the application of nanoparticles in biology and medicine and further characterised using scanning electron microscopy (SEM) and Fourier Transform Infrared Spectroscopy (FTIR). The antimicrobial activity (like antibacterial activity and antifungal activity) of the silver Nanoparticles on *S.aureus* and *E.Coli* and *P.aeruginosa* and *A.niger* was tested. This investigation manifested in the application of Nanoparticles in the production of sterile cotton material. The second part of the experiment includes the induction of autophagy by Silver Nanoparticles and its anticancer activity has been studied.