Green Synthesis, Characterization and Antimicrobial Activity of Silver Nanoparticles using *M. piperita* Leaf Extract

Nabeel Ahmad[1] and Rajiv Dutta[2*]

[1]School of Biotechnology; IFTM University, Lodhipur Rajput Moradabad U.P. India
[2]Institute of Bioscience and Bioengineering, Shri Ramswroop Memorial University, Barabanki (UP), India
E-mail: [1]nabeel.biotech@gmail.com, [2]director.sbt@gmail.com

Abstract—*Silver nanoparticles synthesized through bio-green method has been reported to have biomedical applications to control pathogenic microbes as it is cost effective compared to commonly used physical and chemical methods. Leaf extract of Mentha piperita is a very good bioreductant for silver nitrate ($AgNO_3$) which leads to the synthesis of silver nanoparticles. Leaf extract Mentha piperita was mixed with silver nitrate (AgNO3) and UV-vis spectroscopy and FTIR spectroscopy were used to detect the synthesis of nanoparticles. TEM and SEM were used for size, shape and morphology of synthesized silver nanoparticles. Synthesized silver nanoparticles were of ~54 nm in diameter and spherical shape. This biologically synthesized silver showed antibacterial property against gram positive and gram negative bacterial species (E. coli and Streptococcus pneumonia, Pseudomonas aeruginosa, Bacillus subtilis).*

Keywords*: Biosynthesis, Nanoparticles, Characterization, Antimicrobial activity.*