

An investigation on antimicrobial activity of silver nanoparticles (Ag NPs) from probiotic bacteria against multidrug resistant UTI (urinary tract infection) pathogens.

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ABSTRACT

Urinary tract infection is one of the most important causes of morbidity, infrequently becoming life threatening infection. Urinary tract infections are caused by the invasion of the genitourinary tract microorganisms such as *E.coli*, *Klebsiella sp*, *Proteus sp* and *Pseudomonas sp*. Our study investigated the antimicrobial activity of Ag NPs synthesized from *Lactobacillus* against multidrug resistant UTI pathogens. Fifty urine samples were collected and the samples were processed using standard method. All the clinical isolates were subjected to antibiotic susceptibility test. Among the 30 isolates, 16.6% of *E. coli* strains (Ec-3 & Ec-6) were multidrug resistant strain. The extra cellular synthesis of (Ag NPs) occurred during the exposure of *Lactobacillus* culture extract to 1Mm (AgNPs). Characterization of Ag NPs was done by UV-Visible spectroscopy exhibited absorption peak at 200-300nm. Scanning electron microscopy (SEM) image and X-ray diffraction (XRD) pattern showed the size of the NPs were 10 to 50nm with cubic and hexagonal shape. Microbial NPs showed strong inhibition against Multi drug resistant *E.coli* (Ec6) 23 ± 0.4 & (Ec3) 18 ± 0.6 . This study was concluded that microbial (Ag NPs) could be a potential therapeutic approach for the treatment of infection with multi drug resistant bacteria in UTI infection.