

The potential for using heavy metal resistant microorganisms in the treatment of metal containing liquid effluents has been studied intensively and the bacterial strains with genetically determined systems for resistance to multiple toxic heavy metal ions seem to be very important effluent treatments.

This study was carried out to determine the incidence of heavy metal resistance plasmids in metal tolerant bacterial strains and their relative sizes. The metal tolerant bacterial strains had been isolated from the effluent canal and other places associated with textile factory at Veyangada. Their minimum inhibitory concentrations towards heavy metal ions Cu^{2+} , Cr^{6+} , Pb^{2+} were reconfirmed and the highest resistant strains to all 3 metal ions were selected.

All selected bacterial strains were Gram negative belonging to genera *Enterobacter*, *Serratia*, *Hafnia*, *Pseudomonas*, *Acinetobacter* and *Alcaligenes*. These bacterial strains were able to tolerate higher levels of antibiotics (ampicillin, tetracycline, streptomycin). This heavy metal resistance associated with high levels of antibiotic resistance indicates the presence of R plasmids in these bacterial strains.

From these bacteria, plasmid DNA was isolated by a modified alkaline lysis method. The presence of plasmid was demonstrated by agarose gel electrophoresis. From selected strains only *Pseudomonas* and *Acinetobacter* species showed the presence of plasmids and these plasmids were comparatively smaller than the multiple heavy metal resistance plasmids those have been reported earlier. The appropriate size of these plasmids was within the range of 30-40 kb.