ABSTRACT

Water is vital to our existence in life but these are at risk of contamination from various sources of contaminants e.g. pit latrine, domestic wastes, wide range of agricultural industrial activities, leakage from landfills and urbanization results into the contamination of aquifer. Play an important part in water contamination, resulting in a variety of problems. Disease outbreaks and deaths have occurred as a result of contaminated water caused by bacteria. The most notorious waterborne bacteria are Shigella, Campylobacter, Salmonella, Mycobacterium, Cholerae, Clostridium and E. coli.

This research work was conducted on the water samples from which the bacterial strains isolated and characterize. These samples are collected from the City Sialkot Up stream, Mid-stream and Downstream of Marala headwork of River Chenab. The study was carried out by different physicochemical parameters like pH, Temperature, color, odor, TSS, TS, TDS, Total hardness and DO to evaluate the quality of these water samples. After testing samples of water, four pathogenic bacterial strains were isolated using blood agar test that show Alpha and beta hemolysis. Different Biochemical tests and effect of different parameters i.e. Temperature, PH, plant extracts, antibiotics and Nano particles were checked and observed. Temperature for all bacteria is 37°C,20°C and 34°C and Optimum pH was 6,7 and 8. Strain S1 show the maximum growth at 6 pH and Strain S2 show maximum growth at 34°C. with Different potency of Different antibiotics i.e. Meronem and Cefiexme were applied to check the resistance of bacterial strains .Meronem gave more sensitivity against S2and S4 strains and proved as more effective antibiotic while Cefixime gave least sensitivity against these strains and proved as less effective antibiotic .Three Nano particles and four plants extracts with normal concentration were applied to bacterial strains, All strains were not sensitive to these Nano particles and plants extracts. Nanodrops also carried out which show the maximum DNA in strain S3. The bacterial Ribotyping was carried out by amplifying 16s RNA gene.