Characterization of high Exopolysaccharide produced by a halophilic thermotolerant bacteria *Halomonas nitroreducens* strain WB1

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Aim: To study the exopolysaccharide (EPS) produced by a novel thermophilc and halophilic bacterial genus *Halomonas nitroreducens* strain WB1 isolated from Bakreshwar hot springs.

Methods and Results: The strain WB1 was taxonomically chacterized by carbohydrate utilization tests and 16S rDNA sequencing. The characterization of the anionic EPS produced by *H. nitroreducens* strain WB1 was showed it is composed of glucose, mannose and galactose. The studied EPS was highly viscous and had pseudoplastic nature. Most significant finding was the EPS is found to be mixture of three polysaccharides under FT-IR and had emulsifying and antioxidant activity along with binding capacity to heavy metals.

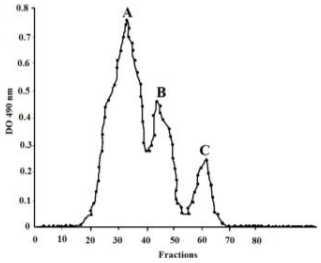

Fig. 1. Anion-exchange chromatogram of EPS

Conclusions: The EPS studied in this work produced by bacterial genus *H. nitroreducens* WB1 has physical and chemical properties different from earlier reported EPSs produced by halophilic and non-halophilic bacterial genus, suggesting that the extreme geological niches like hypersaline or thermophilic environments, which are not studied so far can offers extensive and potential resources for medical, biotechnological and industrial applications.