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**Production and Characterisation of Exopolysaccharide from *Natrialba wudunaoensis***

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**Abstract:**

Microbial exopolysaccharides (EPS) are produced by several bacteria and fungi under adverse conditions of environment. Over the years, scientists have also discovered multifarious uses for them in food, pharmaceutical, petroleum and other industries. The EPS from lactic acid bacteria (LAB) today constitute the most widely used EPS in the food industry as they are already accepted as GRAS. However, several other microorganisms are also being looked at today and Archaea are among the front runners as many members of the halophiles and thermophiles are known to produce copious amounts of EPS.

In this paper we report the production and characterisation of an EPS from the extremely haloalkaliphilic Archaeon *Natrialba wudunaoensis* SSBJUP-5. Isolated from the famous alkaline Lonar Lake, this strain began producing the EPS in a glucose containing medium from the 9<sup>th</sup> day to reach a maximum yield of 2.4mg/ml on the 15<sup>th</sup> day. This yield was higher than the one it gave in a non glucose containing medium.

Hydrolysis and chromatographic analysis revealed the polysaccharide to consist mainly of glucose and fructose. Rheological studies of the EPS solutions were also carried out and the viscosity found to be unaffected by extremes of pH, temperature and salt concentration indicated its suitability for several industrial and other applications.

**Keywords:** Exopolysaccharides, Archaea, *Natrialba*, viscosity