Development of Vi polysaccharide for typhoid using animal components-free SCDM medium with high yield

Asokan C and Catherine O A
Sokoto State University, Nigeria

Abstract

The method of producing a Vi polysaccharide comprises of culturing an encapsulated bacterium in a suitable culture medium at a suitable pH that forms the downstream process followed by recovery from the culture medium of the Vi polysaccharide and its characterization that forms the upstream process. Vi capsular polysaccharide is synthesized during the growth of *Salmonella typhi* Vi producing strain and is spontaneously released from the bacterial cells into the culture medium during the culture. Vi polysaccharide is dependent on the cell mass, i.e., greater the cell mass, greater is the secretion of Vi polysaccharide. The optimization of culture conditions and adjustment of animal components-free media components favor Vi polysaccharide secretion. The animal components-free media and the pH of the media play significant role in its secretion tested by slide agglutination test and estimation of Vi polysaccharide. It has been observed that early exposure to a high concentration of glucose (10 gmL^{-1}) resulted in an absence of Vi polysaccharide secretion in the stationary phase but not during the growth phase. This might be due to secretion of by-products that inhibited Vi polysaccharide secretion when the starting glucose concentration was around 3 gmL^{-1}. In conclusion, the Vi polysaccharide was secreted at a high level throughout both the growth and the stationary phases.

Biography

Asokan C has completed his PhD from University of Madras and Postdoctoral studies from Columbia University, NY, USA. He is the Associate Professor, Department of Biochemistry, Sokoto State University, Sokoto, Nigeria. He has published more than 36 papers in reputed journals and has been serving as an Editorial Board Member of repute.