Lipopolysaccharide-independent radioimmunoprecipitation and identification of structural and in vivo induced immunogenic surface proteins of Salmonella typhi in typhoid fever

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The humoral response to Salmonella typhi is important for protective immunity against typhoid fever, as indicated by the protection obtained with killed cell vaccines and component vaccines (outer membrane proteins, Vi antigen) in animals and human beings. Nonetheless, analysis and interpretation of host humoral immune response to S. typhi surface antigens have been difficult because of the complex structure of the S. typhi envelope and the lack of purified reagents for detection of immune response to individual surface components. Normal and convalescent human sera from typhoid fever patients were absorbed with S. typhi lipopolysaccharide. These sera were used in radioimmunoprecipitation assays of whole S. typhi cells and S. typhi membranes labelled with either 125I or 35S-methionine. This strategy has permitted the unequivocal identification of a humoral immune response to structural and in vivo induced outer membrane proteins of S. typhi. In this manner, we have identified the porin