The Immunogenicity Response of *Streptococcus pneumoniae's* Adhesion Molecule of 78 kDa Subunit Pili Protein

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ABSTRACT

Streptococcus pneumoniae remains a leading cause of childhood morbidity and mortality around the world. Bacterial pili mediate bacterial adhesion to host cells, an important step in bacterial infection. Although pilus expression in Gram positive bacteria has not been reported until recently, there is evidence to show similar functional capacity to Gram negative bacterial pili. Pilus expression was shown to be important for pneumococcal pathogenicity, and also for induction of protective immunity. The purpose of this study was to determine the immunogenicity of 78 kDa *S.pneumoniae* subunit pili protein through hemagglutination inhibition and adhesion inhibition test. Adhesion inhibition test used antibodies that is formed from pili protein, to inhibit bacterial adhesion to the enterocytes. Hemagglutination inhibition test also used antibodies that formed from pili protein, to inhibit the agglutination of erythrocytes caused by *S.pneumoniae*. The results showed that antibodies, which was formed from 78 kDa *S.pneumoniae* subunit pili protein, were able to inhibit hemagglutination process up to 2X dilution. Adhesion inhibition test showed that the higher antibody dilution, the greater the adhesion index. Pearson correlation analysis of the adhesion test showed that there was a significant correlation between antibody dilution with bacterial adhesion index (R = 0.900). It can be concluded that the 78 kDa subunit pili protein of *S.pneumoniae* was immunogenic.

Key word : *S. pneumoniae*, protein subunit pili, immunogenicity respon

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