

***In Vitro* Anti-Adhesive Activity of Acidic Polysaccharide from *Panax ginseng* on *Porphyromonas gingivalis* Binding to Erythrocytes**

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Abstract :

A polysaccharide with high uronic acid content from the roots of *Panax ginseng* was found to inhibit the ability of *Porphyromonas gingivalis* to agglutinate erythrocytes. This polysaccharide showed strong inhibitory activity (minimum inhibitory concentration 0.25 mg/ml), but treatment with pectinase resulted in noninhibitory hydrolyzed products. In contrast, the inhibition by the acidic polysaccharide from the leaves of *Artemisia capillaris* was negligible. The carbohydrate composition of the two polysaccharides indicated that the anti-adhesive activity may be correlated with glucuronic acid content, one of the components of glycosaminoglycans. Low molecular weight heparin and sucrose octasulfate revealed stronger inhibitory effects on bacterial binding, than the acidic polysaccharide from *P. ginseng*. Furthermore, we investigated the inhibitory effect of *P. ginseng* polysaccharide to *Actinobacillus actinomycetemcomitans*, *Lactobacillus acidophilus*, and *Escherichia coli*. The acidic polysaccharide from *P. ginseng* demonstrated selective inhibitory activity on these bacterial adhesion to erythrocytes. Whereas it has a high inhibitory activity to the binding of *A. actinomycetemcomitans* to erythrocytes, the polysaccharide does not show any effect on the binding of *L. acidophilus*, and *E. coli*. These results, together with that on *Helicobacter pylori*, suggest that the polysaccharide from *P. ginseng* is selectively able to inhibit the adhesion of pathogenic bacteria to human cells.

Reference :

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