

## **ABSTRACT**

Cystic fibrosis is an autosomal recessive disease that is caused by mutation of the CFTR protein („cystic fibrosis transmembrane conductance regulator“). The CFTR protein is an ion channel for chloride and bicarbonate ions transmission. This defect leads to the formation of dense mucus in lungs that causing breathing problems and chronic bacterial infections. Passive immunization by administering chicken antibodies produced against pathogen can be used as a prophylaxis for patients with cystic fibrosis. Immunoglobulins Y reduce adhesion of bacteria to lung epithelial cells and prevent infection. This strategy is a good alternative to classical antibiotic therapy because it targets the pathogen and doesn't affect normal bacterial microflora. At first the chicken antibodies produced after immunization of the experimental hen by *Burkholderia cenocepacia* lectin (BC2L-A) were isolated and further purified on an affinity column with covalently bound lectin. The affinity purified fraction was 9 times concentrated compared to original fraction as far as the content of the specific anti-lectin antibody is concerned. The amount of affinity purified antibodies is approx. 0.2% of the total isolated immunoglobulins. Their immunoreactivity has been verified using recombinant lectin and the lectin produced by bacterial cells. The lectin production by microorganisms cultivated in liquid medium and on solid soil (agar plate) was examined. The results show that the pathogen doesn't produce lectin during cultivation in liquid medium, but when cultivate on agar plates. Fraction of affinity purified antibody can be used to perform an adhesion assay to study the effect of immunoglobulins on the ability of bacterial cells to adhere to lung epithelial cells.

## **KEY WORDS**

yolk immunoglobulins, virulence factors, ELISA