Frequency of Phospholipase and Elastase Generating Genes in Clinical Isolates of Pseudomonas Aeruginosa in Guilan

Keyvan Hariri*,

In the pathogenesis process of Pseudomonas aeruginosa in addition to antibiotic resistance, it produces a variety of virulence secretory factors including toxins, pyocyanins, lipopolysaccharides, pili, flagellase and various enzymes of phenotypes and enzymes. In this study, clinical isolates of Pseudomonas aeruginosa were collected urine samples, burns and pulmonary secretions of patients in hospitals of Guilan province September to July 2006 and transferred to the laboratory. To confirm the diagnosis and purification of bacteria, hot staining tests, oxidase test, catalase test, urease test, citrate use, culture in TSI medium (Triple Suger Iron Agar) and culture on Muller Hinton agar medium Were conducted. DNA extraction was performed by boiling method.The DNA extraction and PCR production were taken on 1% agarose gel and electrophoresed to confirm the accuracy of DNA extraction and PCR accuracy. 90 isolates of Gram-negative rods, oxidase-positive, lactose-negative bacteria, capable of growing at 42° C and growing in McConnell medium, producing pigment in the molar Hinton agar medium and lacking fermentation in the TSI medium, as Pseudomonas aeruginosa were identified. The amplification of lasB and plcH genes in the PCR reaction of 90 isolates, the presence of lasB and plcH genes was identified respectively, in 72 isolates (80%) and 65 isolates (72.2%). Products by approximately 300 and 307 bp length were produced. Frequency of plcH and lasB genes in urine samples and pulmonary secretions was more than 70% and their ability to produce biofilms was more than 80%. The important role of virulence genes, especially plcH and lasB genes in bacterial pathogenic islets was biofilm formation as an important pathogenic factor and colonization of Pseudomonas aeruginosa.

Keywords : Pseudomonas aeruginosa, biofilm, lasB, plcH and plcN