Abstract

Colibacilosis is one of the most important bacterial diseases in poultries which is frequently observed in Iran. Data about characteristics of acuity factors of *E. coli*, isolated from colibasilosis lesions is very limited. Identification of *E. coli* acuity factors in experimental studies and the correlation between acuity and resistance to serum, have increased people insight about disease procedure in infections caused by this bacterium and helped significantly identifying pathogenic strains and control of *E. coli* in poultry industry. There is low information about genes contributed in acuity of *APEC* in Zabol region. Obviously, a comprehensive analysis of mechanisms of serum resistance, need detailed studies about bacterium genes which are responsible for serum resistance. Based on available references, *iss* and *bor* genes are involved in developing serum complement resistance in pathogenic *E. coli* of poultries. With regards to this fact and also 90% similarity between amino acid sequences of *iss* and *bor* genes, simultaneous study of these two genes can be helpful. In the present study, the rate of *iss* and *bor* genes expression and the effect of time in expression rate of these two genes in pathogenic *E. coli* of poultries in Zabol and the resistance created in the bacterium by these two genes encountering serum were evaluated.

After evaluation of serum efficacy, and confirmation of presence of *iss*, *bor* and *gapdh* genes in pathogenic *E. coli* of poultries, exposition of bacterium with serum was performed and 24, 28 and 32 hours of incubation was done. After that, the expression of *iss*, *bor* and *gapdh* genes in isolated E. coli from poultries were performed by semi quantitative RT-PCR. The results showed that, the expression level of *bor* gene in exposition with serum was significantly higher than expression of *iss* gene. Whiles, the expression of *iss* gene was significantly increased by time, but the expression rate of *bor* was decreased. With regards to these results, factors such as difference in number of duplication of genes, difference in location of genes in each strain, the effect of alteration processes and limitation in exposition with serum, other usages of *bor* gene and presence of other genes involved in serum resistance in higher expression of *bor* compared to *iss* gene, play roles.

Keywords: pathogenic *E. coli* of poultries, multiplier gene of serum resistance, serum resistance, Semi quantitative reverse transcriptase polymerase chain reaction, *bor*

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