

Abstract:

The aim of this research was to study the presence and prevalence of two genes involved in serum resistance of *Escherichia coli* isolated from healthy ostriches in comparison with infected poultry by colibacillosis in Birjand.

In this study, 113 feces samples included 59 samples from healthy ostriches and 44 samples from poultry infected by colibacillosis were collected. Presence of *Escherichia coli* in these samples was checked by biochemical tests. Presence of two genes, *iss* and *bor*, was studied by PCR and their nucleotide sequence was determined. Finally, phylogenetic tree of these genes was drawn.

In this study, 89 samples included 45 feces samples from healthy ostriches and 44 samples from infected poultry by colibacillosis were *Escherichia coli* positive. Frequency of *iss* gene in *Escherichia coli* isolated from healthy ostriches' feces and infected poultry by colibacillosis was 50% and 64.4%, which wasn't significantly different. On the other hand, frequency of *bor* gene in *Escherichia coli* isolated from healthy ostriches' feces and infected poultry by colibacillosis was 31.8% and 15.6% and frequency of isolates which have both genes in *Escherichia coli* isolated from healthy ostriches' feces and infected poultry by colibacillosis was 18.2% and 11.1%. In this study, 45.5% *Escherichia coli* isolated from healthy ostriches and 57.8% *Escherichia coli* isolated from infected poultry by colibacillosis only had one gene. 36.4% isolates of healthy ostriches had none of these genes, and this factor in isolates of infected poultry by colibacillosis was 31.1%. Furthermore, although the results indicated that frequency of simultaneous presence of two genes was more in isolates of healthy ostriches, but there was no significant difference between this isolate and isolate of infected poultry by colibacillosis. Although statistical frequency of *iss* and *bor* in healthy ostriches and infected poultry by colibacillosis was similar, virulence factors and pathogenesis of *Escherichia coli* is different between these two groups. Due to our results, *iss* gene is more important in diagnosis of colibacillosis in poultry. Phylogenetic results indicated that genes identified in ostriches were protected.

Key words: Ostrich, Colibacillosis, Serum resistance, Birjand, *Escherichia coli*



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**Presence and prevalence of tow genes involved in serum resistance of
Escherichia coli isolated from healthy ostriches in comparison with
infected poultry by colibacillosis in Birjand**

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