## Molecular screening of one week old broilers for *Mycoplasma gallisepticum* contamination

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**Objectives:***Mycoplasma gallisepticum* (MG) infection leads to great losses in poultry flocks. Respiratory manifestations of the infection are commonly observed in poultry flocks. Although, other forms of infection are also possible. Various methods are applied for detection of this infection. Culture, serologic and molecular methods are used for this purpose. Among them, molecular based tools have advantages comparing to others. Diagnostic laboratories commonly use serological assays for detection of MG infection.
**Material and Methods:** Twenty broiler flocks of 1-week old of West Azarbayjan province (Northwest of Iran) included in this survey. Five swab samples from the choanal cleft and trachea were suspended in 1.5 ml of PBS and pooled.After extraction step, DNA subjected to PCR using 16SrRNA primers.
**Results and conclusion:**All tested samples were negative. Due to high importance of MG infections in broilers, early and accurate detection of infection in flocks is necessary. In this regard, molecular methods such as PCR can be used with high efficiency in one week old broiler flocks.
**Keywords:***Mycoplasma gallisepticum*, PCR, broiler, 16SrRNA.

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## Evaluation the cross immunity of a heated trivalent avian colibacillosis vaccine in broiler chickens

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**Objectives:** Massive outbreak of E. coli infections in poultry industry and treating it with antibiotics cause great economic and health losses. Due to the presence of resistant strains of bacteria in some colibacillosis cases, complete remission can not be done by commonly used antibiotics. Moreover, nowadays, because of increased antimicrobial residues in meat and eggs, other methods such as healthcare management and vaccination are better to be used to prevent infectious diseases in poultry. Currently, vaccination is not used to prevent the disease in Iran.
**Materials & Methods:** In this study, a mixture of three serotypes of E. coli [O78: K80, O2: K1 and O1: K1], which were inactivated by heating, and alum as an adjuvant was used for producing vaccine. In order to evaluate the efficacy, homologous and heterologous immunity of the vaccine, 96 broiler chickens were randomly divided into four groups: vaccinated and challenged with O78, vaccinated and challenged with O26, non-vaccinated and challenged with O78, non-vaccinated and challenged With O26 seropgroup. When the chickens were 14 day-old, Vaccination was done by subcutaneous injection of 0.5 ml vaccine in the dorsal neck but for non- vaccinated groups, saline solution was used instead of vaccine. Then at 35 days of age, chickens were challenged according to grouping. The impact of prepared vaccine on cross Immunization was evaluated by traits analysis like body weight gain, feed conversion ratio, feed consumption, mortality, serologic studies, necropsy and clinical signs and Bacterial isolation.
**Results & Conclusion:** In examining the mentioned traits after challenge, non-vaccinated groups had decreased appetite and severe drop in food intake and weight gain. Also at necropsy of the dead chicks of non-vaccinated group, characteristic symptoms of colibacillosis disease was observed. While in the treatment groups specially the vaccinated group which challenged with O78 serogroup the common symptoms of diseases were much less than control groups. Considering the results based on this study, it can be stated that studied vaccine in broiler chickens has the ability to create cross-protective immunity and can prevent the occurrence of colibacillosis clinically and serologically. But in case of survey the average weight gain, it can be said that Intensity of cross-protective immunity generated by the vaccine is less than Homologus immunity.
**Keywords:** Escherichia Coli , Vaccine, Cross Immunity, broiler chickens