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Tracking the antibody level against *Ornithobacterium rhinotracheal* in the serum of slaughtered turkeys in Khuzestan province using In-house ELISA

Sedigheh Yousefinejad[1], Mohammad Khosravi[2*], Darioush Gharibi[3], Mansoor Mayahi[4] and Masoud Reza Seyfi Abad Shapouri[5]

[1] PhD Graduated in Veterinary Bacteriology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
[2] Associate Professor, Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
[3] Associate Professor, Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
[4] Professor, Department of Livestock, Poultry and Aquatic Animal Health, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
[5] Professor of the Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran

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Abstract

Ornithobacterium rhinotracheal (ORT) is a Gram-negative pathogen that is one of the causes of respiratory diseases in birds. Co-infection of *Ornithobacterium rhinotracheal* with other pathogens can cause serious health problems in bird species and also lead to financial losses in the poultry industry. Serological methods are among the most important techniques for rapid infection diagnosis, farm monitoring, infection control and prevention. The purpose of this study was to design an ELISA test to assess the prevalence of ORT and track the amount of ORT-specific antibody in serum collected from turkeys. After immunizing three pieces of turkey and obtaining the immunization serum, antibody purification was performed using ion exchange chromatography and affinity chromatography methods. The purified antibodies were then used in a homemade ELISA reaction as a standard sample to determine the quantity of specific antibodies against ORT. A total of 244 serum samples were collected from turkeys slaughtered in the poultry slaughterhouse of Khuzestan province. ELISA testing revealed the significant presence of antibodies against ORT in 141 (57.78%) of the samples. The average concentration of antibodies in positive samples was 467.72 ± 124.128 micrograms per milliliter of serum, while in negative samples it was 262.97 ± 37.263 micrograms per milliliter. This study revealed the prevalence of ORT infections in Khuzestan province. Therefore, due to the lack of a reliable vaccine against *O. rhinotracheal*, it is necessary to implement good disease management and biosecurity measures in order to effectively control the disease.

Key words: *Ornithobacterium rhinotracheal*, Turkey, Antibody, ELISA

[*] **Corresponding Author**: Mohammad Khosravi, Associate Professor, Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
E-mail: m.khosravi@scu.ac.ir

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