

Isolation and Molecular Identification of Newcastle disease virus in broiler breeder flocks in Mazandaran province

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Abstract

The Newcastle disease virus (NDV) causes infection in a wide range of birds and is considered a global threat to the poultry industry worldwide. To isolate and identify the molecular NDV, trachea and caecal tonsil samples were collected from dead birds suspected to Newcastle disease from 15 vaccinated broiler breeder flocks in Mazandaran province during 2020 to 2021. The tissue samples after preparation were inoculated into 9-day-old embryonated chicken eggs. The RT-PCR reaction was performed to detect the F gene of NDV on allantoic fluids. The PCR products of 3 isolates were sequenced, and a phylogenetic tree was drawn. The results of comparing the amino and nucleotide sequences of partial F gene isolates obtained from Mazandaran province showed that genotype VIIId is circulating in broiler breeder farms and is 99 to 96% similar to previous reported isolates in Iran. It was concluded that the isolation of VIIId genotype from vaccinated broiler breeder flocks during the production period means that the present vaccination program could not successfully prevent Newcastle diseases in breeder farm and it is a necessary type of vaccine and changed vaccination program.

Keywords: Newcastle disease, Broiler breeder, Genotype VIIId, RT-PCR

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