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Hatchery Vaccination Quality Control of Herpesvirus of Turkey-Infectious Bursal Disease HVT-IBD Viral Vector Vaccine Application by Specific qPCR

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Abstarc :

Infectious Bursal Disease Virus (IBDV) control can be achieved using vector turkey Herpesvirus vaccines expressing IBDV immunogenic proteins (HVT-IBD). Vaccination Quality Control (QC) and assurance of a vaccine take are of paramount importance for these vaccines. This work aims to assess the commercial HVT-IBD vector vaccine take and its *in vivo* recovery after hatchery application. A specifically designed quantitative real time polymerase chain reaction (qPCR) assay was used in laboratory reared conventional broilers and from field vaccinates. Results showed positive HVT-IBD vaccine virus PCR detection between 60 and 100% in fresh feathers with a maximum observed at 28 days post-vaccination. Positive samples were consistently shown in fresh spleen tissues and bursas and in fresh Peripheral Blood Mononuclear Cells (PBMC) from day 11. Free range vaccinates were 98% positive at 35 days and 88% at 81 days of age. Overall, the results suggest that the HVT-IBD vector vaccine immunization success was associated to consistent vaccine virus recovery during several weeks post-vaccination. Considering that immunization success in a flock is linked to efficient vaccine virus recovery in a maximized proportion of birds, a tool to monitor this criterion was needed. A qPCR test designed to be specific for the HVT-IBD vector vaccine evaluated in this work was tested with success. The most appropriate samples for vaccination monitoring, fresh feather tips, spleen and PBMC were defined. They allowed studying the kinetics of *in vivo* recovery of the HVT-IBD vaccine. These results contributed to HVT-IBD vector vaccine vaccination QC assessment.

Key Word :
Ha tchery vaccination, quality control, Infectious bursal disease virus, vector vaccine, HVT-IBD , qPCR

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