

# Nephritis Associated with a S1 Variant Brazilian Isolate of Infectious Bronchitis Virus and Vaccine Protection Test in Experimentally Infected Chickens

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### Abstract :

Infectious bronchitis virus (IBV) induces a significant negative impact on poultry production worldwide, specially due to the continuous emergence of viral variants. This virus causes damage to the respiratory tract, and depending on the virus strain, affects and damages the urogenital system. The objective of this study is to characterize the pathotype and the cross-immunity with regard to Massachusetts vaccine strain (H120) of a Brazilian IBV field isolate (IBVPR-05) previously S1 genotyped as a variant. The pathogenicity test was conducted on two experimental groups of specific pathogen free chickens; one was vaccinated with attenuated Massachusetts H120 strain and the other remained non-vaccinated. Three weeks after vaccination, both groups were challenged with IBVPR-05. The tracheal ciliostasis, and the viral load, histopathology and immunohistochemistry in trachea and kidney samples were evaluated. The viral loads, measured by quantitative real time RT-PCR, were higher in kidney than in trachea, and the most prominent histopathological changes were found in the kidneys. The renal lesions were characterized by the presence of nephritis with intense inflammation, tubular epithelial cell degeneration and necrosis. The H120 vaccine induced a partial protection against the infection of trachea and kidney tissues by this variant isolate. Thus, the Brazilian variant isolate IBVPR-05 was characterized in this study as a nephropathogenic pathotype and as a protectotype differing from Massachusetts vaccine strain of IBV. This indicates the importance to determine these biologic characteristics of other Brazilian variant IBV isolates, in order to implement more effective control measures of IBV infection in this country.

### Key Word :

Avian infectious bronchitis virus, variant, nephropathogenic, nephritis, massachusetts vaccine

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