

A NEW PROTECTOTYPE OF A VARIANT GENOTYPE OF INFECTIOUS BRONCHITIS VIRUS (IBV) ISOLATED IN BRAZIL DEFINED BY TEST OF PROTECTION WITH MASSACHUSETTS H120 VACCINE STRAIN

(UM NOVO PROTECTOTIPO DE UM GENÓTIPO VARIANTE DO VIRUS DA BRONQUITE INFECCIOSA (VBI) ISOLADO NO BRASIL DEFINIDO PELO TESTE DE PROTEÇÃO VACINAL COM A ESTIRPE MASSACHUSETTS H120)

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A high number of IBV genotypes and phenotypes (serotypes and pathotypes) are frequently emerging worldwide, including the variant strains found in Brazil, despite the routine vaccination in this country with Massachusetts IBV vaccine strains. However, grouping IBV strains into immunotypes or protectotypes is more relevant from a practical point of view, because it provides direct information about the efficacy of an IBV vaccine. IBV strains that induce protection against each other belong to the same protectotype. In this study, we conducted the evaluation of protection induced by the Massachusetts (H120) vaccine strain upon challenge with a variant strain of IBV isolated in Brazil. Twelve SPF (specific pathogen free) chickens were vaccinated with by oculo-nasal route at 21 days old and challenged with field isolate 21 days post-vaccination. Three birds were euthanized at 4, 7, 11, 14 days post-infection (dpi). Clinical signs were recorded and tissue samples were collected from trachea, kidney and gonads, and were evaluated for the presence of lesions by histopathology, viral load by RT-qPCR, viral tropism by immunohistochemistry, and tracheal ciliary stasis. Mild respiratory symptoms were observed in vaccinated and challenged chickens. Additionally, IBV was detected in all organs of vaccinated birds, though higher viral loads were present in kidneys and testicles. The tracheal lesions were more prominent between 4-7 dpi. The kidney showed a moderate nephritis between 4-11 dpi, and the testicle showed degeneration of the seminiferous tubules cells between 7-14 dpi. Thus, the H120 vaccine induced only a partial protection against this Brazilian variant isolate with regard to the infection of trachea and kidney and no cross-protection to the infection of testicles. In conclusion, a new protectotype of a variant genotype of a Brazilian IBV isolate was characterized in this study with regard to Massachusetts vaccine strain which is currently used in Brazil.

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