

**HOMOLOGOUS AND HETEROLOGOUS HUMORAL IMMUNE RESPONSES INDUCED
BY H120 VACCINE AND FIELD VARIANT STRAINS OF INFECTIOUS BRONCHITIS
VIRUS (IBV)**

*(RESPOSTAS IMUNES HUMORAIS HOMÓLOGA E HETERÓLOGA INDUZIDAS POR ESTIRPES
VACINAL H120 E VARIANTE DE CAMPO DO VÍRUS DA BRONQUITE INFECCIOSA
AVIÁRIA (VBI))*

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The protection against homologous strains of IBV is usually achieved by immunization with vaccines containing attenuated strains. However, variation in some structural proteins of IBV results in vaccine failure against heterologous strains circulating in the field. In this study, we measured the humoral immune responses using an ELISA test in vaccinated and non-vaccinated birds with the Massachusetts H120 strain and challenged with a virulent Massachusetts strain, or with a variant strain. Experimental groups of SPF chickens vaccinated or not with Massachusetts strain on day 2 and challenged on day 21 with the variant strain, or with virulent Massachusetts strain, were tested. Blood and tear samples were collected on days 4, 7, 11, 14 and 21 post infection (dpi), to measure the levels of IgM, IgA and IgG anti-IBV antibodies. The results showed that serum and lachrymal IgM started to increase at the 4th dpi, reaching the highest concentration in the 7th dpi and decreased thereafter to the basal levels until 21 dpi. The IgA was detected only in the tear, and the highest concentration was found at 14 dpi, declining from this time-point until 21 dpi. The IgG concentration remained low until 11 dpi, increasing up to reach a maximum level, at 21 dpi. The levels of all immunoglobulin isotypes were higher in birds vaccinated with attenuated Massachusetts strain and challenged with virulent homologous strain, compared to birds vaccinated with Massachusetts strain, but challenged with the variant strain, suggesting this virus does not belong to Massachusetts serotype. This hypothesis is confirmed when the IgG levels were determined using this variant virus as target antigen in ELISA. Our results indicate that serum and lachrymal anti-IBV antibodies are effectively induced by immunization and infection with homologous and heterologous IBVs, and their levels can be used to evaluate anti-IBV immunity in poultry flocks.

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