

Relationship Between Mucosal Antibodies and Immunity Against Avian Infectious Bronchitis Virus

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Abstract :

Immunity against avian infectious bronchitis virus (IBV) was assessed in specific pathogen free (SPF) chickens vaccinated at age of three weeks with H120 attenuated vaccine strain and, after three weeks, by measuring the virus-neutralizing and viral specific antibody isotypes in the mucosa (lachrymal secretion) and systemic (serum) compartments, followed by the evaluation of the protection to challenge with the M41 virulent strain of IBV. Lachrymal virus-neutralizing (VN) and IgG or IgA anti-IBV antibodies induced by H120-vaccination and detected at challenge showed significant correlation with the protection against IBV infection. No significant correlation was observed between lachrymal IgM anti-IBV antibodies, or between serum antibodies and protection to IBV infection. Therefore, the results of this study indicate that lachrymal antibodies, especially those expressing virus-neutralizing activity and from IgG and IgA isotypes, are effectively induced by immunization with IBV attenuated vaccine strain and are associated with the tracheal protection against IBV infection, suggesting that the levels of these lachrymal antibodies can be used for monitoring the protective immunity against IBV in vaccinated chickens.

Key Word :

Infectious bronchitis virus, lachrymal virus-neutralizing and IgG and IgA antibodies, trachea | humoral immunity, H120 attenuated vaccine