

Studies on avian infectious bronchitis - Trevisol I.M.^{1*}, Jaenisch F.R.F.¹, Silva V.S.¹, Brentano L.¹, Klein T.A.P.¹, Ianiski F.¹, Caron L.¹, Okino C.H.¹, Silva A.D.², Ritterbusch G.A.², Esteves P.A.¹

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Our research line focuses on methodologies for the study of avian infectious bronchitis (AIB). Our work consists on perform *in vivo* protection studies to investigate the cross protection between new "variants" of infectious bronchitis virus (IBV) and H120 live vaccine. These studies consist in analysis of genome, phenotype, tracheal ciliary activity and microscopic lesions of the different virus strains. Thus, clinical samples are submitted to Reverse Transcriptase followed by Polymerase Chain Reaction (RT-PCR). Positive samples are sequenced and phylogenetically analysed in order to determine homology of these samples with the reference sample M41 and then classified as classical or "variant". Variant strains are inoculated in SPF birds in order to determine the *in vivo* pathogenicity. After inoculation, multiple tissues are collected for ciliary activity analysis and microscopic examination. According to organ's tropism, viruses are classified in different pathotypes. For the protection study, variant samples of different pathotypes are selected to challenge birds. The *in vivo* protection test provides information about the ability to H120 vaccine to protect or not protect against new "variants" of IBV. So far, "variants" strains of IBV have been detected in the field. Moreover, H120 live vaccine protects birds against these "variants" strains.

Key-words: IBV, pathotype, protectotype

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STUDIES ON AVIAN INFECTIOUS BRONCHITIS

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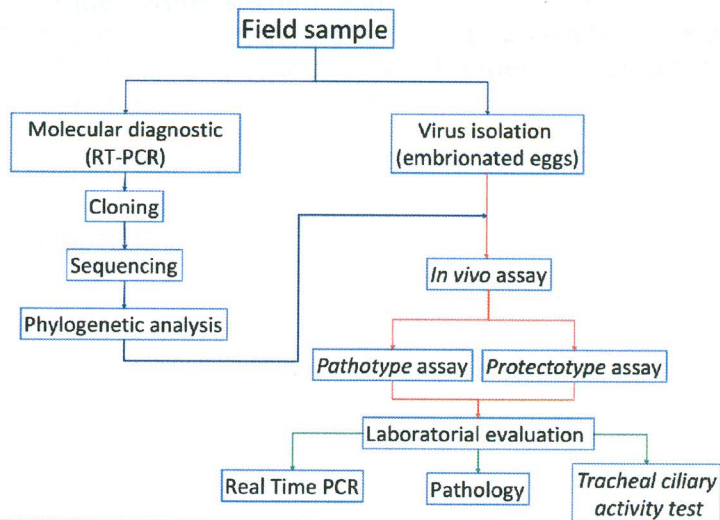
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INTRODUCTION

Our research line focuses on methodologies for the study of avian infectious bronchitis (AIB). Our work consists on perform *in vivo* protection studies to investigate the cross protection between new "variants" of infectious bronchitis virus (IBV) and H120 live vaccine. These studies consist in analysis of genome, phenotype, tracheal ciliary activity and microscopic lesions of the different virus strains. Thus, clinical samples are submitted to Reverse Transcriptase followed by Polymerase Chain Reaction (RT-PCR). Positive samples are sequenced and phylogenetically analysed in order to determine homology of these samples with the reference sample M41 and then classified as as classical or "variant". Variant strains are inoculated in SPF birds in order to determine the *in vivo* pathogenicity. After inoculation, multiple tissues are collected for ciliary activity analysis and microscopic examination. According to organ's tropism, viruses are classified in different pathotypes. For the protection study, variant samples of different pathotypes are selected to challenge birds. The *in vivo* protection test provides information about the ability to H120 vaccine to protect or not protect against new "variants" of IBV. So far, "variants" strains of IBV have been detected in the field. Moreover, H120 live vaccine protects birds against these "variants" strains.

MATERIALS & METHODS



CONCLUSION

- ✓ Embrapa Swine and Poultry has the structure necessary for the testing of vaccine protection for IBV. This assay has shown the effectiveness of the vaccine Massachusetts H120 with different field samples variants.
- ✓ Classifying the field strains in protectotypes, is usefull to decide strategies on control of AIB disease.

