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Evaluation of the protection conferred by an attenuated vaccine (Mass-type H120) of avian infectious bronchitis against a new emerging Italy 02 genotype in Moroccan broiler chickens

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Avian infectious bronchitis (IB) is one of the most important viral diseases of poultry, affecting chickens of all ages and causing major economic losses in poultry flocks. In spite of regular vaccination with Massachusetts (Mass) strain has been available to control IB for many decades in Morocco, which is most commonly used. However, the continuous of the spread of IB in Morocco has shown the emergence of a novel strain of Italy 02 genotype with 32% detected for the first time in Africa between 2010 and 2014, co-circulating with both serotypes: Massachusetts with 66% and 4/91 with 2% from vaccinated and unvaccinated chicken flocks. This emergence remains a problem for the poultry industry and vaccine manufacturers. Therefore the aim of this study is to evaluate the protection conferred by available live vaccine (Mass-type H120) against Italy 02 genotype that was recently isolated from Moroccan Broiler Chickens. For this purpose, 100 one-day-old specific pathogen free chickens were divided randomly into three groups. Group-1 was immunized intraocularly with vaccine (Mass-type H120) at 103 EID50 (following the manufacturer protocol), whereas Group-2 was kept as no immunized controls (unvaccinated challenged chickens) and Group-4 was kept as control of the experimentation (unvaccinated unchallenged birds). 3 weeks after vaccination, all of the birds were challenged intraoculo-nasally with 103.5EID50 of Italy 02 virus. Chickens in each group were monitored for 14 days post challenge (dpc). Protection was evaluated based on the clinical signs scoring, serological response and virus re-isolation from tracheal swabs. No clinical signs attributable to IBV challenge were observed in vaccinated and challenged groups at 14 dpc. No birds died after challenge with Italy 02 strain of IBV. The results of the virus re-isolation from the homogenate of tracheal swabs and of allantoic fluid (AF) collected from IBV inoculated in 9 to 11 days old embryonated chicken eggs and amplification of the viral RNA by real-time PCR proved the presence of the virus in trachea of challenged chicks. These results demonstrated that the live vaccine Mass type H120 used in Morocco afforded the clinical sings protection against Italy 02 genotype emerging in Moroccan poultry farms. This results will be completed with the histopathological examination to prove the infection protection of the multiplied virus in respiratory tracts, but it is interesting to spend for future studies for development of a universal vaccine which capable to protect the chicks against IBV irrespective of the serotype and genotype.

Biography

Khadija Khataby is a PhD Student from the Faculty of Science and Techniques, University Hassan II of Casablanca, Morocco. She is a Young Researcher on Virology and Molecular Biology, especially on development Of Vaccines against avian infectious bronchitis disease in Morocco. She contributes in virology and molecular characterization of infectious bronchitis virus (IBV) and in the development of control strategies of IBV in collaboration with Society Biopharma, Rabat, Morocco. She has published 4 papers in reputed journals and communicated her studies in many international congresses.

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