



## **Viral Respiratory Diseases**

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**Efficacy of combination of Infectious Bronchitis vaccines including different Mass and 793B genotypes products against a D388 (QX) or Q1 challenge in commercial broilers and SPF layers**

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**Abstract: Efficacy of combination of Infectious Bronchitis vaccines including different Mass and 793B genotypes products against a D388 (QX) or Q1 challenge in commercial broilers and SPF layers**

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Infectious bronchitis (IB) is an infectious disease of chickens caused by a gamma coronavirus. Many different genotypes and serotypes of this virus exist, which does make it more complicated to achieve a high level of protection rendered by vaccination.

In this experiment, the level of protection against a challenge with IBV D388 (QX) at day 28 or with IBV Q1 at day 29 was determined in commercial broilers and SPF layers that had been vaccinated at day 1 by eye-drop with one of 3 different combinations of vaccines of the Massachusetts (Mass) and 793B serotype, or a combination with a Mass and D274 serotype. The level of protection was determined using the ciliostasis test at 5 days post challenge.

The negative control group showed full cilia beating as expected (CPS of 100%). The results of the positive control group for D388 (QX) and for Q1 showed full damage in the respiratory tract (100% ciliostasis).

All vaccination programmes were able to induce high levels of cross-protection in the SPF birds against the D388 (QX) and Q1 challenges at 4 weeks of age. The level of cross-protection against the D388 (QX) challenge varied from 96% up to 100%, whereas the level of cross-protection against Q1 varied from 91% to 100%.

The same vaccination programmes were also able to induce high levels of cross-protection in the commercial broilers with maternally derived antibodies against the D388 (QX) and Q1 challenges at 4 weeks of age. The level of cross-protection against the D388 (QX) challenge varied from 70% up to 94%, whereas the level of cross-protection against Q1 varied from 87% to 97%. The average level of cross-protection was 13% lower in the commercial birds compared to the SPF birds showing the limited effect of the MDA on the efficacy of the vaccination at day of hatch.

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