

Innovax[®]-ND-ILT with IBD 89/03[®]: *In ovo* or subcutaneous vaccination for compatibility of Marek's disease, Newcastle disease, ILT and IBD with one hatchery injection

INTRODUCTION

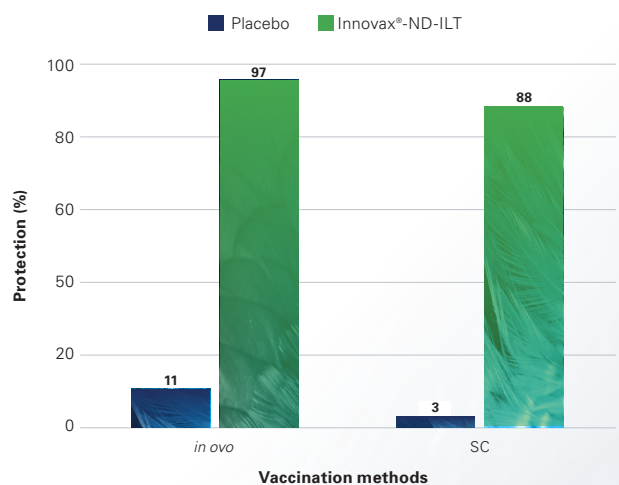
89/03[®] is a patented, live infectious bursal disease (IBD) vaccine for the prevention of disease due to classical, Delaware variant and GLS variant IBD challenge. Both vaccines may be given *in ovo* to 18-day embryonated chicken eggs or via subcutaneous injection to day-old chicks. Studies have been conducted to demonstrate the compatibility and safety of these vaccines given together as a single injection¹.

MAREK'S DISEASE PROTECTION WITH COMBINED INNOVAX ND-ILT AND 89/03[®]

- SPF eggs vaccinated *in ovo* at 18 days' embryonation or SPF chicks vaccinated subcutaneously (SC) at day 1 with approximately 3,000 PFU (plaque forming units) of Innovax[®]-ND-ILT and a commercial dose of 89/03[®] IBD vaccine.
- Birds challenged at 5 days of age by intraperitoneal injection (as per 9 CFR) with virulent GA 5 Marek's disease strain.
- Birds were evaluated over 49 days for clinical signs and gross lesions of Marek's disease.

**COMPATIBILITY WITH
MAREK'S DISEASE, ND,
ILT AND IBD**

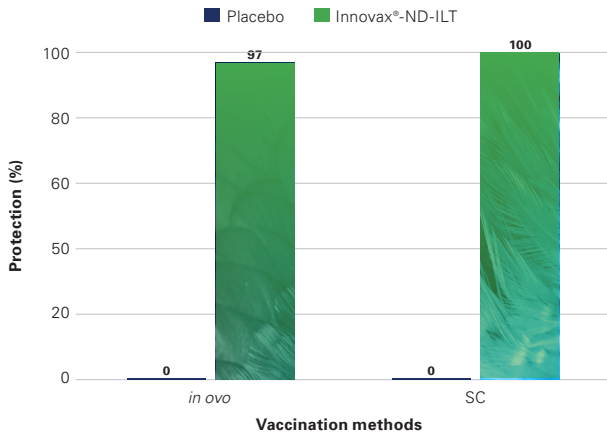
Figure 1. Marek's disease protection



NEWCASTLE DISEASE PROTECTION WITH COMBINED INNOVAX ND-ILT AND 89/03[®]

- SPF eggs vaccinated *in ovo* at 18 days' embryonation or SPF chicks vaccinated subcutaneously (SC) at day 1 with approximately 3,000 PFU of Innovax[®]-ND-ILT vaccine and a commercial dose of 89/03[®] IBD vaccine.
- Birds challenged at four weeks by intramuscular injection (as per 9 CFR) with virulent Texas GB challenge strain.
- Birds were evaluated over 14 days for clinical signs of Newcastle disease or death.

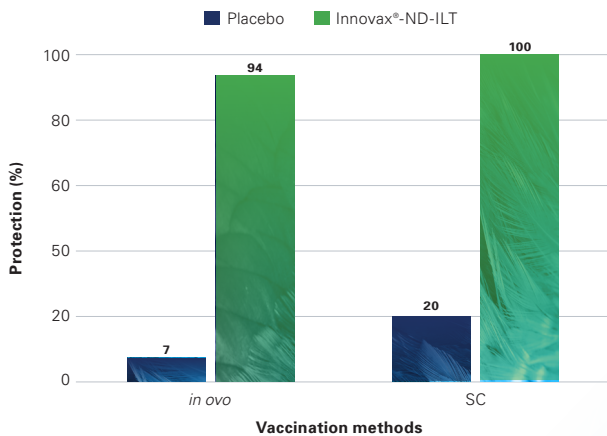
Figure 2. Newcastle disease protection



INFECTIOUS LARYNGOTRACHEITIS PROTECTION WITH COMBINED INNOVAX ND-ILT AND 89/03®

- SPF eggs vaccinated *in ovo* at 18 days' embryonation or SPF chicks vaccinated subcutaneously (SC) at day 1 with approximately 3,500 PFU of Innovax®-ND-ILT vaccine and a commercial dose of 89/03® IBD vaccine.
- Birds challenged intratracheally at four weeks (as per 9 CFR) with virulent challenge ILT Lot 96-3 provided by the USDA.
- Birds were evaluated over 10 days for clinical signs of infectious laryngotracheitis or death.

Figure 3. ILT protection



CLASSICAL AND VARIANT IBD PROTECTION WHEN 89/03® IS COMBINED WITH INNOVAX®-ND-ILT

- SPF eggs vaccinated *in ovo* at 18 days' embryonation or SPF chicks vaccinated subcutaneously (SC) at day 1 with a commercial dose of Innovax®-ND-ILT vaccine and a commercial dose of 89/03® IBD vaccine.
- Birds were challenged with IBDV STC strain (Classical groups) or the IBDV Variant Delaware E strain (Variant groups) via eye drop at 4 weeks age as per 9CFR requirements.
- Protection from clinical signs or death was evaluated over a 10 day-period following challenge.

Figure 4. Classical IBD protection

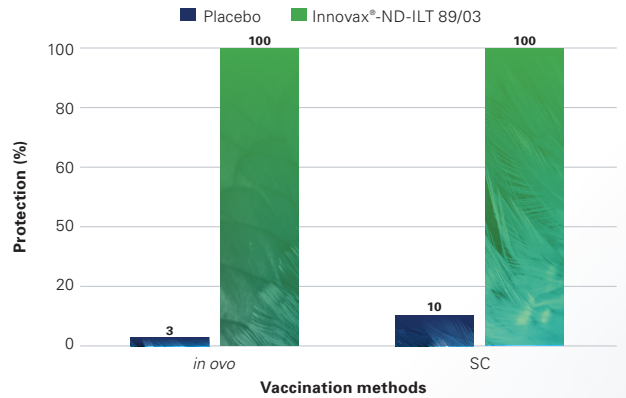
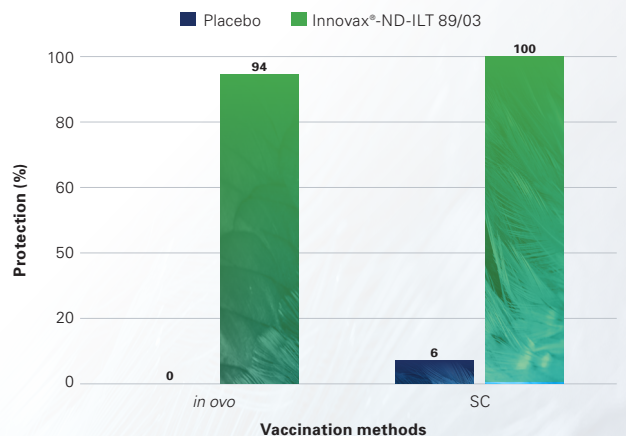


Figure 5. Variant IBD protection



CONCLUSION

Innovax®-ND-ILT with near minimum protective dose was compatible with a commercial dose of 89/03 IBD vaccine, providing the opportunity to vaccinate chicks against Marek's disease, ND, ILT and classical and variant IBD all with the convenience of *in ovo* or subcutaneous route.

1. Avian Pathology 2019, Vol. 48, No. 1, 45-56

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