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Reference: IBV vaccine



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Subunit Poultry Vaccine for Infectious Bronchitis Virus (IBV) and Newcastle

Overview: IBV is highly prevalent in the poultry industry and causes millions of dollars in losses despite extensive vaccination. Furthermore, studies indicate that current IBV live vaccines lead to new viruses that actually perpetuate IBV infection. This subunit vaccine provides robust protection without the complications associated with currently available live vaccines.

Advantages:

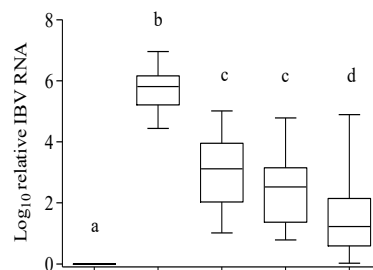
- **ADAPTABLE** — Subunits of emerging serotypes can be quickly used in new vaccines
- **DUAL PROTECTION** — Confers protection against IBV and Newcastle
- **STANDARD DELIVERY** — Spray, *in ovo*, or injection

Description: Although subunit vaccines are safer than attenuated live vaccines, subunit approaches against IBV have traditionally fared poorly due to lack of effectiveness and difficulty of mass delivery. This new approach uses a larger portion of the viral attachment protein (S1/S2) which is better able to attach to chicken tissues. Vaccinating one day old chickens with a Newcastle Disease vector expressing both the S1/S2 subunit and the adjuvant GM-CSF confers protection. Boosting with commercially available Mass vaccine boosts immunity with the possibility of cross-protection against other IBV strains. This novel subunit vaccine could be used in layers or breeders by injection, or mass delivered to broilers via spray or *in ovo*, using viral vectors, nanoparticles, or other means.

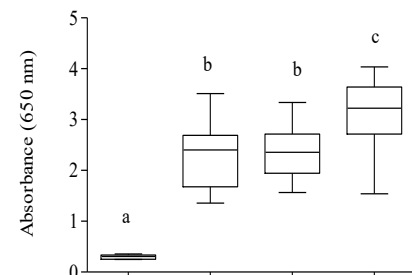
Status:

- Subject of US Patent [10,772,953](#) and separate pending Provisional Application.
- Demonstrated using Newcastle vector for convenient delivery
- This technology is available for exclusive or non-exclusive licensing and co-development

Viral load in trachea



Antibody levels



Mass	-	-	P	P	B	Mass	-	P	P	B
S1/2+GMCSF	-	-	-	B	P	S1/2+GMCSF	-	-	B	P
Challenge	-	+	+	+	+	Challenge	-	+	+	+
		↙	↘							

FIGURES: Viral load in trachea 5 days post challenge is lowest in chickens primed (P) with S1/S2 subunit and boosted (B) with a Mass vaccine while antibodies 14 days post-boost with Mass are highest.

