

NUPLURA® PH+ Non-Interference Demonstration

KEY FINDINGS

- The vaccination group implementing NUPLURA PH+ demonstrated significant prevention of pneumonic lung tissue due to *M. haemolytica*
- This study found that the fractions added for NUPLURA PH+ did not interfere with the efficacy against *M. haemolytica*
- No adverse events were reported during the study. Animals were observed and only transient swelling was reported

STUDY OVERVIEW¹

A blinded controlled study was conducted to compare the efficacy of NUPLURA PH+ against Titanium® 5 and a control product for protection against *Mannheimia haemolytica*. This study followed the animals for 14 days post-vaccination and evaluated the vaccines for protective efficacy against lung lesions due to *M. haemolytica* pneumonic infections.

This study demonstrated that NUPLURA PH+ maintained efficacy against *M. haemolytica* when fractions for IBR, BVD Types 1 and 2 were added to NUPLURA PH. This study supported the licensing of NUPLURA PH+3 (IBR, BVD Types 1 and 2) and NUPLURA PH+BVD.

TRIAL DESIGN

- Calves were assigned to one of three vaccination groups:
 - NUPLURA PH+*
 - Titanium 5
 - Control (adjuvanted saline)

*The combination of NUPLURA PH + Titanium 5 was assessed in this non-interference study and supported the licensing of the following vaccines: NUPLURA PH+3 (IBR+BVD) and NUPLURA PH+BVD. NUPLURA PH + Titanium 5 is not licensed as a combination.

MATERIALS AND METHODS

Study population—63 high-risk calves, 80 to 82 days of age at time of vaccination. Calves were acclimated in polydome huts upon arrival, vaccinated with the respective vaccine on study day 0, commingled on study day 3, and challenged on study day 10 with *M. haemolytica* administered intratracheally. Animals were observed at least once daily at feeding time. Four days after challenge—study day 14—calves were sacrificed and necropsied by a veterinarian or trained personnel to score all lungs by visualization and palpation for percentage of pneumonic lung tissue due to *M. haemolytica*.

TABLE 1.
MITIGATED FRACTION AND LOWER 95% CONFIDENCE LIMITS FOR PERCENT PNEUMONIC LUNG TISSUE

Group Comparisons†	Calves per Group		Lung Lesion Mean Score		Mitigated Fraction	Lower 95% CL	Fisher's Exact P-Value
	IVP	CP	IVP	CP			
1 VS 3	21	21	6.82	21.69	0.601	0.311	0.000681‡
2 VS 3	21	21	25.66	21.69	-0.088	-0.438	0.581
Group Comparison	Group 1	Group 2	Group 1	Group 2	Mitigated Fraction	Lower 95% CL	Fisher's Exact P-Value
1 VS 2	21	21	6.82	25.66	0.596	0.293	0.000317‡

† 1 = NUPLURA® PH+; 2 = Titanium® 5; 3 = Control (adjuvanted saline); IVP = Investigational Veterinary Product; CP = Control Product

‡ P-Value of ≤ 0.05 is significant

To learn more about NUPLURA PH+, contact your herd health veterinarian, Elanco sales representative, technical consultant or visit NUPLURA.COM

The label contains complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.

†Elanco Animal Health. Data on File.

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