

# Tech Specs

Elanco

NUPLURA™ PH

+5

## NUPLURA® PH+5

### Protection Against Bacterial *Mannheimia Haemolytica* And Viral Causes Of BRD

#### Easy on cattle easy on you

In one vaccination, NUPLURA PH+5\* combines the powerful protection and rapid immune response of NUPLURA PH against *M. haemolytica* and Titanium® against viral causes of BRD with the smoothness you've come to know from NUPLURA PH.

#### NUPLURA PH+5 Benefits

##### RIGHT WHEN IT MATTERS

NUPLURA PH+ delivers the right protection at the right time. Vaccinate animals for just what they need right when it matters. NUPLURA PH+ delivers protection against *M. haemolytica* and viral causes of BRD in one vaccination so it is less stressful on the animal and requires less labor and time to administer.

##### FAST-ACTING IMMUNITY

Immunity with NUPLURA PH+ has fast onset of immunity against *M. haemolytica*—just 10 days. It has also been demonstrated to be safe for calves as young as 28 days.

##### EASY ON CATTLE

NUPLURA PH+ uses only purified antigens allowing for a smooth vaccination while still providing a strong immune response.<sup>1</sup> NUPLURA PH+ combines smooth with power for a difference you can see such as minimal swelling at injection sites.<sup>2</sup>

##### POWERFUL PROTECTION

The combination in NUPLURA PH+5 provides powerful protection against both bacterial and viral pathogens that cause BRD and weakened immune systems in one shot. NUPLURA PH+5 uses advanced recombinant technology—a process that focuses the immune response on building immunity with minimal adverse side effects.<sup>3</sup>

#### NUPLURA PH+5

**INDICATIONS:** This product has been shown to be effective for the vaccination of healthy cattle, 3 months of age and older, against respiratory disease caused by *Mannheimia Haemolytica* and disease caused by infectious bovine rhinotracheitis, bovine viral diarrhea virus (Type 1 and Type 2), bovine parainfluenza virus (PI<sub>3</sub>), and bovine respiratory syncytial virus (BRSV). The duration of immunity for this product has not been established. For more information regarding efficacy and safety data, see [productdata.aphis.usda.gov](http://productdata.aphis.usda.gov)

A single dose has been shown to be effective against respiratory disease caused by *M. haemolytica* as early as 10 days after administration. Safety has been demonstrated in calves 28 days of age and older.

**COMPOSITION:** Contains *Mannheimia haemolytica* Outer Membrane Proteins and recombinant leukotoxin, Modified Live Bovine Rhinotracheitis Virus and cytopathic BVD Types 1 and 2 isolates, PI<sub>3</sub>, and BRSV.

**ADJUVANT:** Emulsigen® D.

**DIRECTIONS:** Rehydrate the desiccated vial with accompanying diluent (NUPLURA PH PCN 7906.R0). Shake well before using. Administer a 2 mL dose subcutaneously following Beef Quality Assurance guidelines, followed by a second dose of monovalent bovine respiratory syncytial virus vaccine (Titanium™ BRSV) 14 to 28 days after the first dose. The need for annual booster vaccinations has not been established for this product. For advice on revaccination frequency, in general or in the face of maternal antibody, stress, or a disease exposure, consultation with a veterinarian is recommended.

**PRECAUTIONS:** Do not use in pregnant cows or in calves nursing pregnant cows. This product has not been tested in pregnant animals. Store out of direct sunlight at 2° to 8°C (35° to 46°F). DO NOT FREEZE. Do not mix with other products, except as specified on this label. Use entire contents when first opened. Inactivate all unused contents before disposal. Do not vaccinate within 60 days before slaughter. Transient injection site swelling may occur. In case of anaphylactic reaction treat with Epinephrine. In case of human exposure, contact a physician. Contains thimerosal and gentamicin as preservatives.

**VLN/PCN:** 196/4X59.R1



TECHNICAL DISEASE INFORMATION

MANNHEIMIA HAEMOLYTICA

*Mannheimia haemolytica* is the primary bacterial species involved with bovine respiratory disease which is estimated to cost North American feedlots US \$1 billion annually.<sup>4</sup> *M. haemolytica* is connected to serious outbreaks of acute pneumonia in neonatal, weaned and growing calves, and pneumonia in adult cattle. Transportation, viral infections such as BVD or IBR, overcrowding, weaning and other stressful conditions predispose animals to *M. haemolytica*. Animals with *M. haemolytica* can experience:

- Lack of appetite
- Increased nasal discharge
- Fever
- Labored breathing
- Cough

PARAINFLUENZA-3 (PI3)

- Endemic infection in cattle populations
- Usually mild, consisting of fever, nasal discharge, and dry cough
- Part of the BRD complex of viruses

BOVINE VIRAL DIARRHEA (BVD)

BVD virus is one of the most prevalent and challenging bovine pathogens in the world. There are hundreds of BVD viral strains, and the number continues to increase due to the mutating nature of the virus. The BVD virus manifests itself in numerous ways, including:

- Bovine respiratory disease
- Hemorrhagic (bleeding) syndrome
- Reproductive disorders, including infertility, abortion and neonatal defects
- Persistently infected (PI) calves that shed infective virus throughout their lives
- Gastrointestinal disorders
- Mucosal disease in PI calves

INFECTIOUS BOVINE RHINOTRACHEITIS (IBR)

IBR, sometimes referred to as “red nose,” is caused by bovine herpesvirus-1. The IBR virus is associated with:

- Upper respiratory tract infections
- Bovine respiratory disease
- Eye disorders like conjunctivitis
- Reproductive disorders such as infectious pustular vulvovaginitis, abortion and neonatal death

BOVINE RESPIRATORY SYNCYTIAL VIRUS (BRSV)

- Predominantly in young beef and dairy cattle less than 6 months old
- Considered a primary bovine respiratory disease (BRD) pathogen and is also a component of the BRD complex
- Clinical signs:
  - Fever (40–42°C [104–108°F])
  - Decreased feed intake
  - Increased respiratory rate
  - Cough
  - Nasal and lacrimal discharge

Deliver The Right Protection When It Matters Most

With NUPLURA® PH+, you can now provide important protection against both bacterial and viral causes of bovine respiratory disease. You can choose the right protection, knowing it will be smooth and gentle on your animals while still creating the strong immunity needed.

NUPLURA PH OPTIONS						
Combination	Bacteria	Modified Live Virus				
Vaccine (2 mL dose)	<i>M. haemolytica</i>	BVD Type 1	BVD Type 2	IBR	BRSV	PI <sub>3</sub>
NUPLURA PH	✓					
NUPLURA PH+5	✓	✓	✓	✓	✓	✓

To learn more about NUPLURA PH vaccines, contact your herd health veterinarian, Elanco sales representative or technical consultant, or visit [NUPLURA.COM](http://NUPLURA.COM)

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

\* The combination of NUPLURA PH + Titanium 5 was assessed in non-interference and safety studies which support the licensing of the following vaccines: NUPLURA PH+3 (IBR+BVD) and NUPLURA PH+5.

<sup>1</sup>Elanco Animal Health. Data on file.

<sup>2</sup>Elanco Animal Health. Data on file.

<sup>3</sup>Elanco Animal Health. Data on file.

<sup>4</sup>Noyes NR, Benedict KM, Gow SP, Booker CW, Hannon SJ, McAllister TA, Morley PS. *Mannheimia haemolytica* in Feedlot Cattle: Prevalence of Recovery and Associations with Antimicrobial Use, Resistance, and Health Outcomes. *J Vet Intern Med* 2015;Mar-Apr;29(2):705–713.

