ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

## Pasteurella multocida Toxin (PMT)

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| ☐ **Cat #** PTFA16-P | Pasteurella multocida Type IV fimbrial subunit protein (PTFA) control peptide | **SIZE**: 100 ug |
| ☐ **Cat #** PTFA11-A | Rabbit Anti-Pasteurella multocida Type IV fimbrial subunit protein (PTFA) peptide IgG, aff pure | **SIZE**: 100 ug |

***Pasteurella multocida*** is a Gram-negative, nonmotile, penicillin-sensitive coccobacillus belonging to the Pasteurellaceae family. Strains belonging to the species are currently classified into five serogroups (A, B, D, E, F) based on capsular composition and 16 somatic serovars (1-16). P. multocida is the cause of a range of diseases in mammals and birds, including fowl cholera in poultry, atrophic rhinitis in pigs, and bovine hemorrhagic septicemia in cattle and buffalo. It can also cause a zoonotic infection in humans, which typically is a result of bites or scratches from domestic pets.

P. multocida causes a range of diseases in wild and domesticated animals, as well as humans. P. multocida strains that cause **fowl cholera in poultry** typically belong to the **serovars 1, 3, and 4**. The P. multocida serotype-1 is most associated with avian cholera in North America. P. multocida causes atrophic rhinitis in pigs; it also can cause pneumonia or bovine respiratory disease in cattle. In humans, P. multocida is the most common cause of infection from wound infections after dog or cat bites. Infection with Pasteurella multocida is a significant cause of clinical disease in **rabbits**. Snuffles, a highly contagious pasteurellosis of rabbits primarily affects the upper respiratory tract with potential fatal consequences, such as septicemia, pneumonia, chronic rhinitis, and otitis media as well as multiple abscesses. Different strains of P. multocida have been isolated from rabbits. **A:12 is the most common in rabbits in the U.S., but A:3 and other A and D serotypes exist**. More severe disease has been associated with A:3 and D strains.

P. multocida expresses a range of virulence factors including a polysaccharide capsule and the variable carbohydrate surface molecule, lipopolysaccharide (LPS). Strains that cause atrophic rhinitis in pigs are unique as they also have P. multocida toxin (PMT) residing on a bacteriophage. PMT is responsible for the twisted snouts observed in pigs infected with the bacteria. Many P. multocida serogroup D strains produce P. multocida toxin (PMT), a dermonecrotic toxin, which is responsible for the clinical signs of PAR in swine. PMT has been considered a suitable, effective molecule for vaccination. PMT is 146 kda Dermonecrotic (1285-aa).

PtfA (a type 4 fimbrial subunit protein of Pasteurella multocida) is an 18-kDa protein with a high degree of similarity to other fimbrial proteins, except for its prolonged signal sequence. The protein is found on serotype A, B and D strains and is often associated with increased virulence. This protein composes a signal peptide, a hydrophobic amino terminus of mature protein and a pair of cysteine residues at the C –terminus.

### Source of Antigen and Antibodies

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| **Antigen** | 24-aa peptide from **rabbit**<br>**Epitope location** ~ C-terminus, Cytoplasmic domain |
| **Ab Host/type** | Rabbit, Polyclonal unpurified antiserum (#PTFA11-S) |
| **2-Ab** | Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available). |
| **-ve control** | # 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control |

### Form & Storage of Antibodies/Peptide Control

**Antiserum (unpurified)**
☐ 100ul ☐ solution ☐ lyophilized powder
Supplied in Buffer: 0.05% azide
**Reconstitute** powder in 100 ul PBS

**PTFA peptide**
☐ 100 ug/100 ul ☐ solution ☐ lyophilized powder
Supplied in Buffer: PBS pH 7.5,
**Reconstitute powder in PBS at 1 mg/ml.**

### Storage

**Short-term**: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

**Long-term**: at –20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability**: 6-12 months at –20°C or below.
**Shipping**: 4°C for solutions and room temp for powder

### Recommended Usage

ELISA, Western blot

Cellular Activity

studies on the GTP trimer bound protein dependent signaling pathways.

Induction of aggregation of Swiss 3T3 cells by incubation with PMT.

### Specificity & Cross-reactivity

24aa PtfA peptide is conserved in PtfA, Pasteurella multocida (100%), type 4 fimbriae subunit, Pasteurella multocida (60%), Pasteurella dagmatis (54%),Aggregatibacter actinomycetemcomitans (56%), Haemophilus parasuis (50%), Haemophilus parainfluenzae (71%),Actinobacillus muris (50%),Actinobacillus minor (46%), Haemophilus haemolyticus (45%),Serratia proteamaculans (52%), Histophilus somni (54%)

**General References**: Petersen, SK (1989) Mol. Microbiol. 4, 821-830; Buys WECM (1989) Nucl. Acid. Res. 18, 2815-2816; Lax AJ (1989) FEBS Lett. 277, 59-64,

**This product is for In vitro research use only.*

### Related material available from ADI

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| AE-310840-NC | Rabbit Pasteurella multocida PTFA IgG -ve serum |
| AE-310840-PC | Rabbit Pasteurella multocida PTFA IgG +ve serum |
| AE-310850-NC | Bovine Pasteurella multocida PTFA IgG -ve serum |
| AE-310850-PC | Bovine Pasteurella multocida PTFA IgG +ve serum |
| AE-310860-NC | Porcine/Swine Pasteurella multocida PTFA IgG -ve serum |

PTFA16-P-PMT peptide 150831C

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