ALPHA DIAGNOSTIC INTERNATIONAL

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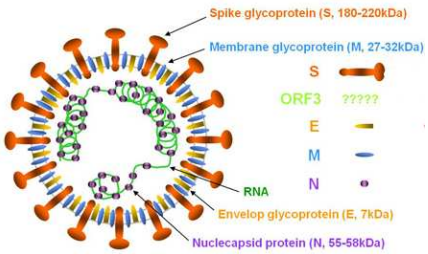
Product Specification Sheet

Recombinant (E.coli, his tag) Porcine epidemic diarrhea virus nucleoprotein (PEDV-NP) (>95%)

□ Cat # PEDV15-R-10 **Recombinant Porcine epidemic diarrhea virus nucleoprotein (PEDV-NP)** **SIZE: 10 ug**

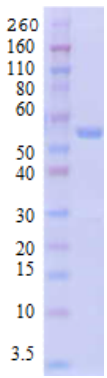
PEDV is an enveloped RNA virus belonging to Group 1a, genus Coronavirus, family Coronaviridae, within the order Nidovirales. is the causative agent of porcine epidemic diarrhea (PED), an enteric disease characterized by vomiting, watery diarrhea, and dehydration in swine. This disease was first reported in feeder and grower pigs in the UK in 1971, after which the virus was identified. The disease has subsequently been reported in a number of European countries and more recently in China, Korea, Japan, Thailand and Vietnam.



The viral genome is a single-stranded positive-sense RNA of approximately 28 kb in size, containing six genes: the **replicase (Rep), spike (S), ORF3, envelope (E), membrane (M), and nucleoprotein (N)** genes, arranged in the order 5'-Rep-S-ORF3-E-M-N-3. S (180–220 kDa), M (27–32 kDa), and N (55–58 kDa) are the major structural proteins. The S protein plays a pivotal role in determining viral-cellular fusion activity and in inducing an immune response in the natural host The M protein plays an important role in the virus-assembly process, and induces antibodies that neutralize virus in the presence of complement The N protein of coronaviruses forms a helical ribonucleoprotein with the virus genomic RNA and is the predominant antigen produced in coronavirus-infected cells, thus making it a major viral target]. Unlike the structural proteins, little is known about the functions of the accessory proteins. The recently-identified ORF3 gene has been demonstrated to be a potentially important determinant of virulence in this virus.

PEDV cannot be transmitted to humans, nor contaminate the human food. PEDV has a substantial economic burden given that it is highly infectious, resulting in significant morbidity and mortality in piglets.. Consumers are likely to feel the effects of the viral disease in the form of higher prices for pork products. PED causes not only the death of neonatal piglets, but also weight loss in fattening pigs due to PEDV-induced diarrhea. Therefore, an effective vaccine strategy is essential in preventing PEDV infection.

Source and Forms of Protein



PEDV NP protein was expressed in E. Coli as his-tag fusion protein (full length, >95%, ~50KDa).
Purified NP protein is supplied in 50 mM Tris-HCl [pH 8.0], 0.25 M NaCl, 5 mM βME, 0.5 mM EDTA, 8 M Urea and 0.25M Imidazole. (or see lot sp. conc. on the vial, typically 10 ug/20 ul).

Store at –20°C in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. This preparation is not biologically active. It is suitable for ELISA as coating antigen or western blot +ve control. Do not freeze, thaw, or heat repeatedly

Form & Storage of Antibodies/Peptide Control

Antiserum

□ 100 ul □ solution □ lyophilized powder
Buffer: PBS+0.05% azide
Reconstitute powder 100 ul of PBS.

Storage

Short-term: unopened, undiluted vials for less than a week at 4°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

Western Blotting: An initial dilution of 1:500-2K is recommended for Western. Purified PEDV-NP is ~50 Kda. Users must optimize antibody dilution depending upon the nature of samples and other technical conditions.

ELISA (1:10-50K; using 50-100 ng antigen/well).

Histochemistry & Immunofluorescence: not tested.

Specificity & Cross-reactivity

PEDV nucleoprotein sequences are about 68-76% conserved in various isolates. Recombinant protein is available for control studies.

References: Shuai J (2007) Virus Genes 35, 619-627; Seo HW (2014) Vet. J. 200, 65-70

*This product is for In vitro research use only.

Related material available from ADI

Catalog#	ProdDescription
AE-310815-1	Porcine/Swine Anti-Pasteurella multocida IgG ELISA Kit, 96 tests
AE-400200-1	Recombivirus™ Porcine/Swine/Pig Classical Swine Fever Virus (CSFV) E2 IgG ELISA kit, Quantitative, 96 tests
AE-400200-5	Recombivirus™ Porcine/Swine/Pig Classical Swine Fever Virus (CSFV) E2 IgG ELISA kit, Quantitative, 5x96 tests
AE-400210-1	Recombivirus™ Porcine/Swine/Pig Classical Swine Fever Virus (CSFV) Erns IgG ELISA kit (DIVA test), Quantitative, 96 tests
AE-400210-5	Recombivirus™ Porcine/Swine/Pig Classical Swine Fever Virus (CSFV) Erns IgG ELISA kit (DIVA test), Quantitative, 5x96 tests
RV-400100-1	Recombivirus Swine/Pig anti-Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) NP Type 1 IgG ELISA kit (1x96 tests)
RV-400110-1	Recombivirus Swine/Pig anti-Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) NP Type 2 IgG ELISA kit (1x96 tests)

PEDV15-R-10-NP-Protein 151009SV

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com