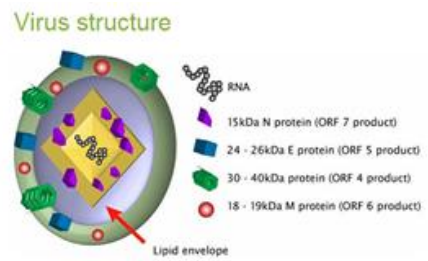
ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

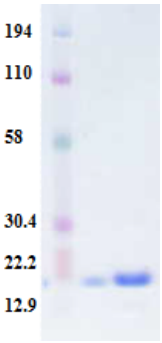
Cat # PRSNP15-R-10 Recombinant (E.coli) Porcine reproductive and respiratory syndrome virus 1 nuclear protein (His tag, >95%) **SIZE**: 10 ug

Porcine Reproductive and Respiratory Syndrome (PRRS) is a disease found in swine farms worldwide and it is characterized by reproductive failure such as late-term abortions in sows and by respiratory illness and mortality in young pigs. PRRS is caused by Porcine reproductive and respiratory syndrome virus (PRRSV), a small, enveloped, positive-stranded RNA virus. It is a member of the family Arteriviridae, which includes Equine arteritis virus, Lactate dehydrogenase elevating virus of mice and Simian hemorrhagic fever virus in the order Nidovirales. The pig (Sus scrofa), whether domestic or feral, is the only species known to be naturally susceptible to PRRS disease. Other species of wild pig and members of family Suidae may be susceptible. The continuous circulation of the virus among the pig population causes severe economic loss for the swine industry. Methods of eliminating virus from endemically infected herds include whole herd depopulation/repopulation, test and removal and herd closure is estimated to cost the U.S. pork industry approximately $664 million per year.



Based on phylogenetic analyses of different virus isolates around the world, PRRSV can be differentiated into two genotypes: **Type 1 (European strains) and Type 2 (North American strains)** that share ~ 55-60% nucleotide sequence identity. Within the type 1 European PRRSV, there exist at least 3 distinct genetic lineages and similarly, at least 9 distinct genetic lineages were identified within the type 2 North American PRRSV. The extensive antigenic and genetic variations among field strains of PRRSV are largely responsible for the poor cross-protection of the current vaccines against heterologous strains. The **PRRSV genome** is ~ **15 kb** and comprises **eight open reading frames** (ORFs). ORFs 1a and 1b situated at the 5` end of the genome, represent nearly 75% of the viral genome and translated into a large polyprotein; which by self-cleavage gives rise to the **non-structural proteins (n**sp1α, nsp1β, nsp2-nsp6, nsp7α, nsp7β, and nsp8-nsp12) that play a key role in viral replication and transcription. **Six putative structural proteins (SPs)** have been identified as ORFs 2-7, located at the 3` end of the genome. ORFs 2–4 encode virion-associated proteins. The virion contains three major structural proteins, an **envelope glycoprotein** (ORF5, GP5 ~25 kda), unglycosylated **membrane protein** M (ORF6, ~18 kda), and **nucleoprotein or nucleocapsid** (ORF7, N ~15 Kda). ORF7/NP is among the most antigenic proteins of PRRS upon infection.
Diagnosis of PRSSV is by virus isolation (VI), detection of PRRS antigen by fluorescent antibody tests (FAT) or immunohistochemistry (IHC), or detection of PRRS by PCR. Serology tests for PRRS antibody like indirect immunofluorescent antibody (IFA), serum neutralization, and enzyme-linked immunosorbent assay (ELISA) have been used.

Source and Forms of Protein



PRSSV1-NP protein was expressed in E. coli as his-tag fusion protein (full length, >95%, ~15 KDa).
Purified PRSSV1-NP protein is supplied in 27 mM Tris-HCl [pH 8], 0.4% Sarkosyl, 0.5 M NaCl and 0.13 M Imidazole (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.

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: Purified PRRSV1-NP is ~15kDa. Load ~100-200 ng/lane for good visibility with appropriate antibodies (#PRSNP11-S).

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

Specificity & Cross-reactivity

PRRSV type 1 nucleoprotein is conserved in type 2 (~58%) Recombinant PRRSV1 proteins are available for control studies.

References: Meulenberg JJM (1993) Virology 192, 62-72; Conzelmann KK (1993) Virology 193, 329-333; Kittawornat A (2012) J. Vet. InDaign. Invest. 24, 262-269; Prickeet JR (2010) Animal Hlth. Res. Rec. 11, 207-216; Yoon KJ (1995) J. Vet. Diagn. Invest. 7, 305-312; Loemab HD (1996) Arch. Virol. 141, 751-761; Martinez-Lobo FJ (1011) Vet. Microbiol. 154, 58-68.

*This product is for In vitro research use only.

Related material available from ADI

PRSNP11-PNC Porcine reproductive and Respiratory syndrome virus 1 nuclear protein (PRRSV1-NP) antibody negative control serum
PRSNP12-PPC Porcine reproductive and Respiratory syndrome virus 1 nuclear protein (PRRSV1-NP) antibody positive control serum
PRSNP15-R-10 Recombinant (E.coli) Porcine reproductive and respiratory syndrome virus 1 nuclear protein (PRRSV1-NP) (His tag, >95%)
PRSNP11-S Anti-Porcine reproductive and Respiratory syndrome virus 1 nuclear protein (PRRSV1-NP) antiserum
PRSNSP13-PNC Porcine reproductive and Respiratory syndrome virus 1 nonstructural protein1 (PRRSV1-NSP1) antibody -ve control serum
PRSNSP14-PPC Porcine reproductive and Respiratory syndrome virus 1 nonstructural protein1 (PRRSV1-NSP1) antibody +ve control serum
PRSNSP16-R-10 Recombinant (E.coli) PRRSV1 nonstructural protein (PRRSV1-NSP1) (his tag >95%)
PRSNSP15-S Anti-Porcine reproductive and Respiratory syndrome virus 1 nonstructural protein (PRRSV1-NSP) antiserum
PRSNP21-PNC Porcine reproductive and Respiratory syndrome virus 2 nuclear protein1 (PRRSV2-NP1) antibody negative control serum
PRSNP22-PPC Porcine reproductive and Respiratory syndrome virus 2 nuclear protein1 (PRRSV2-NP1) antibody positive control serum
PRSNP25-R-10 Recombinant (E.coli) Porcine reproductive and respiratory syndrome virus 2 nuclear protein (PRRSV2-NP) (his tag, 14 kDa)
PRSNP21-S Anti-Porcine reproductive and Respiratory syndrome virus 2 nuclear protein (PRRSV2-NP) antiserum
PRSNSP23-PNC Porcine reproductive and Respiratory syndrome virus 2 nonstructural protein1 (PRRSV2-NSP) antibody -ve control serum
PRSNSP24-PPC Porcine reproductive and Respiratory syndrome virus 2 nonstructural protein1 (PRRSV2-NSP) antibody positive control serum
PRSNSP26-R-10 Recombinant (E.coli) PRRSV2 nonstructural protein (PRRSV2-NSP) (his tag, 30 kDa) purified
PRSNSP22-S Anti-Porcine reproductive and Respiratory syndrome virus 2 nonstructural protein (PRRSV2-NSP) antiserum
SP-100312-1 PRRS-PQGAB-N (AA: Gly-Ser-Ser-Leu-Asp-Asp-Phe-Cys-Tyr-Asp-Ser-Thr) (MW: 1309.33)
SP-100313-5 PRRS-PQGAB-M (AA: Thr-Tyr-Ala-Ser-Asn-Asp-Ser-Ser-Ser-His-Leu-Gln) (MW: 1309.32)
SP-100314-5 PRRS-PQGAB-C (AA: Gly-Thr-Asp-Trp-Leu-Ala-Asn-Lys-Phe-Asp-Trp-Ala) (MW: 1423.56)
SP-100315-5 PRRS-RSAB-N (AA: Ala-Gly-Gly-Ser-Ser-Ser-Thr-Tyr-Gln-Tyr) (MW: 1020.03)
SP-100316-1 PRRS-RSAB-C (AA: Leu-Asn-Gly-Thr-Asp-Trp-Leu-Ser-Asn-His-Phe-Asp-Trp-Ala) (MW: 1675.79)

PRSNP15-R-10-PRRSVNP1-Protein 141215P

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