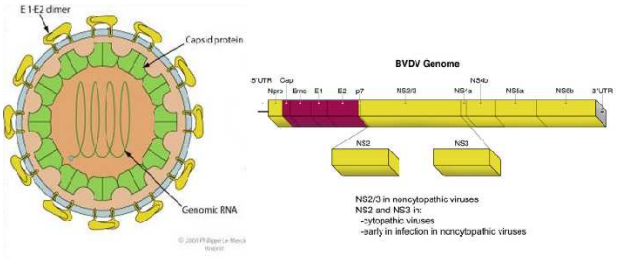
ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Bovine Viral Diarrhea Virus1 Erns protein (BVDV1-Erns) Antibodies and Controls

□ **Cat #** BVDR16-R-10 Recombinant **(E.coli) Purified Bovine Viral Diarrhea Virus1 Erns protein (BVDV1-Erns, his tag) purified** **SIZE**: 10 ug

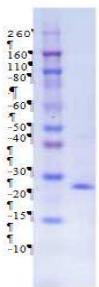
The **Bovine viral diarrhea virus** (BVDV) is a single stranded RNA virus with positive polarity belonging to the genus Pestivirus of the Flaviviridae family of viruses. BVDV is transmitted by persistently infected (PI) animals. PI animals can spread BVDV through saliva, nasal secretions, feces, urine, tears, milk, semen, vaginal discharges, placenta and birth fluids. This virus is responsible for causing Bovine virus diarrhea (BVD) and mucosal disease (MD). The BVDV virus targets the bovine fetus or embryo resulting in embryonal/foetal death, tetratogenesis. BVD is responsible for diarrhea, decreased milk production, reproductive disorders, increased occurrence of other diseases and death. This according to the USDA can cause losses upto $50 $100 per cow to the beef and dairy industry.



Genetically BVDV has been distinguished into two recognized species: BVDV-1 and BVDV-2. 17 subtypes for BVDV-1 and three for BVDV-2 have been identified till date. The core region of the BVDV virion is composed of the genomic RNA coated with capsid. Surrounding the core is a lipid bilayer envelope that has virus-encoded glycoproteins inserted into it. The structural protein - E2 is an integral membrane protein necessary for the infectivity of the virus particle. This glycoprotein contains the major antigenic determinants and the major humoral immune response is targeted towards the E2 protein with the major antigenic epitopes being located at the N-terminal of the protein. The length of the RNA sequence for the E2 protein is 407 aa and the mass of the protein itself is approximately 53 kDa.

ELISA is a valuable tool for BVDV diagnosis which can measure the rapidly rising antibody titers (~2 weeks after infection). Cows and calves infected with BVDV have a compromised immune system and show low milk production and reproductive disorders which can incur heavy losses to the beef and dairy industry. Bovine viral diarrhea has been observed to be highly prevalent (36-88%) in major parts of the world leading to high economic losses.

Source of Antigen



BVDV1-Erns protein was expressed in E. Coli as his-tag fusion protein (full length, >95%, ~22.8 kDa). Purified protein is supplied in 8 mM Na2HPO4, 1.4 mM KH2PO4 at pH 7.4, 2.6 mM KCl, 1M NaCl, 2.5 mM β-ME, 0.1% Sarkosyl and 0.25M Imidazole.
It is suitable for ELISA, Western or other applications where native protein is required. 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 4oC.
Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

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

Recommended Usage

Western Blotting: An initial dilution of 1:500-2K is recommended for Western. 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.

Cross-reactivity: BVDV1 Erns protein is conserved in BVDV2-E2 (~75%) and BVDV3-E2 (72%).

Specificity & Cross-reactivity: This antibody reacts with Bovine Viral Diarrhea Virus2 Envelope glycoprotein 2 and recombinant protein. Antibody Cross reactivity with other proteins has not been established. Recombinant protein is available for control studies.

References: Colett MS, Larson R, Gold C, Strick D, Anderson DK, Purchio AF (1988) Virol 165, 191-199; Iqbal M, Flick-Smith H, McCauley JW (2000) J. Gen. Virol. 81, 451-459.

*This product is for In vitro research use only.

Related material available from ADI

BVDE11-C	Recombinant BVDV1 Envelope glycoprotein 2 (BVDV1 E2) Protein control for western blot
BVDE11-S	Anti-Bovine Viral Diarrhea Virus 1 Envelope glycoprotein 2 (BVDV1-E2) antiserum
BVDE15-R-10	Recombinant (E.coli) Bovine Viral Diarrhea Virus 1 Envelope glycoprotein 2 (BVDV1-E2, his tag) purified
BVDE25-R-10	Recombinant (E.coli) Purified Bovine Viral Diarrhea Virus 2 E2 protein (BVDV2-E2, his tag) purified
BVDE31-C	Recombinant (E.coli) Purified Bovine Viral Diarrhea Virus 3 E2 (BVDV3 E2) Protein control for western blot
BVDE31-S	Anti-Bovine Viral Diarrhea Virus 3 (BVDV3) E2 Protein antiserum
BVDE31-S	Anti-Bovine Viral Diarrhea Virus 3 E2 (BVDV3-E2) protein antiserum
BVDE35-R-10	Recombinant (E.coli) Purified Bovine Viral Diarrhea Virus 3 E2 (BVDV3 E2) Protein (>95%)
BVDR12-C	Recombinant Bovine Viral Diarrhea Virus 1 (BVDV1) Erns Protein control for western blot
BVDR12-S	Anti-Bovine Viral Diarrhea Virus 1 Erns (BVDV1- Erns) Protein antiserum
BVDR16-R-10	Recombinant (E.coli) Purified Bovine Viral Diarrhea Virus 1 Erns Protein (BVDV1-Erns, his tag) purified

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