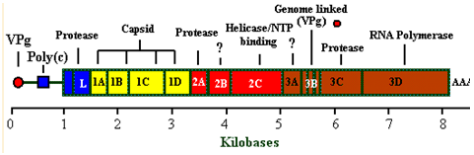
ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Recombinant FMD serotype Sat-1 viral protein 1 (FMDO-VP1)

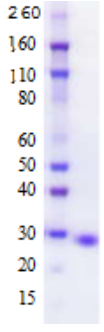
☐ **Cat #** FMDS15-R-10 Recombinant (E-coli) Foot and mouth disease virus serotype SAT-1, viral protein 1 (FMDS-VP1, his tag, 725-950aa) purified
SIZE: 10 ug

FMD disease is a viral disease that affects cloven-hoofed animals, including domestic and wild bovids. The causative agent is FMDV, a picornavirus. The virus causes a high fever followed by blisters inside the mouth and on the feet that may rupture and cause lameness. FMD has severe implications for animal farming, since it is highly infectious and can be spread by infected animals. Its containment demands considerable efforts in vaccination, strict animal monitoring (diagnosis), trade restrictions, quarantines, and occasionally the killing of animals. FMD susceptible animals include cattle, water buffalo, sheep, goats, pigs, antelope, deer, and bison. the disease remains enzootic in many regions of the world, posing a serious problem for commercial trade with FMD-free countries. Endemic areas include parts of Asia, Africa, Midde east and South America. Effective vaccines and stringent control measures have enabled FMD eradication in most developed countries. Of the **seven FMD serotypes**of this virus, A, C, O, Asia 1 and SAT3 appear to be distinct lineages; SAT 1 and SAT 2 are unresolved clades. **FMD serotypes are not uniformly distributed in the regions of the world** where the disease still occurs.



The FMDV genome is~ 8,2Kb. It is a small non enveloped virus with a pseudo T=3 icosahedral capsid made up of 60 copies of four structural (SP) proteins. P1 of the genome encodes for the capsid proteins (VP1-4) while P2 encodes non-structural proteins (NSP2A/2B/2C) and P3 region (NSP3A/Vpg/3Cpro, and 3D pol). VP1-3 are on the surface, and VP4 is internal. VP1 is the major antigen of FMDV capsid protein that contains the major B-cell epitope, which is the major immunodominant epitope eliciting protective humoral immunity. Upon virus entry into a cell, the viral genome is rapidly translated into a polyprotein which is co- and posttranslationally cleaved by viral proteinases into several partially cleaved, likely functional, intermediates and ultimately into 12 mature protein.
Diagnosis of FMDV is based upon virus isolation, presences of FMD antigens or nucleic acid but the presence of serotype specific antibodies in the serum remains the method of choice due to its speed, efficiency and economy. Worldwide, tens of billion doses of FMD vaccine are administered every year. Endemic countries like India manufacture mono, bi and trivalent vaccines BioFMD-Oil™ (Biovet), FUTVAC™ (Brilliant Biopharma). Raksha (Indian Immunological) against strains O,A, Asia 1. Other manufacturers of FMDV vaccine are Bayer, Merial, and Intervet.

Source of Antigen



FMDV-VP1 serotype SAT 1 was expressed in E. Coli as his-tag fusion protein (725-950, >95%, ~26 KDa).
Purified protein is supplied in 50 mM Tris-HCl [pH 8.0], 1M NaCl, 10 mM β-ME, 5 mM EDTA, 8M Urea 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.

Storage

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

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: load 100-200 ng/well.

ELISA (50-100 ng antigen/well).

Specificity & Cross-reactivity

FMDV-VP1 sat-1 is conserved in A (66%) ,C (70%), O (64%), SAT2 (47%) and 3 (48%) serotypes. Cross reactivity has not been established. Antibodies and recombinant proteins for various FMDV serotypes are available for control studies.

References: Rweyemamu M (2008) Transbound Emerg Dis 55:57-72; Carrillo C (2005) J.Virol. 79:6487-6504; Samuel AR (2001)J Gen 82: 609-621; Lee K.N (2009) Virus Res. 139:117-121. Tully (2008) Virology 382 : 250–256; Valarcher (2005); Vet. Rec. 157 (1) 30.

*This product is for In vitro research use only.

Related material available from ADI

FMDS11-C	Recombinant FMD serotype SAT-1, partial viral protein (FMDS-VP1) protein control for western blot
FMDS11-S	Anti-Foot and mouth disease virus serotype SAT-1, viral protein 1 (FMDS-VP1) antiserum
FMDS15-R-10	Recombinant (E-coli) Foot and mouth disease virus serotype SAT-1, viral protein 1 (FMDS-VP1, his tag, 725-950aa) purified
FMDS21-C	Recombinant FMD serotype SAT-2, viral protein 1 (FMDS2-VP1) control for western blot
FMDS21-S	Rabbit Anti-Foot and mouth disease virus serotype SAT-2, viral protein 1 (FMDS2-VP1) antiserum
FMDS25-R-10	Recombinant (E-coli) purified Foot and mouth disease virus serotype SAT-2 viral protein 1 (FMDS2-VP1, his tag) purified
RV-400510-1	Recombivirus Swine/Pig Anti-Foot and mouth disease virus VP-1 (FMDV-VP1, Serotypes SAT1+2+3, Combo) Antibody ELISA kit, 96 tests
RV-400510-5	Recombivirus Swine/Pig Anti-Foot and mouth disease virus VP-1 (FMDV-VP1, Serotypes SAT1+2+3, Combo) Antibody ELISA kit, 5x96 tests
RV-400520-1	Recombivirus Swine/Pig Anti-Foot and mouth disease virus FMDV (all serotypes O/A/A1/SAT1-3) 3ABC Antibody DIVA ELISA kit, 96 tests
RV-400520-5	Recombivirus Swine/Pig Anti-Foot and mouth disease virus FMDV (all serotypes O/A/A1/SAT1-3) 3ABC Antibody DIVA ELISA kit, 5x96 tests
RV-400600-5	Recombivirus Bovine/Cow Anti-Foot and mouth disease virus VP-1 (FMDV-VP1, Serotypes O+A+A1, Combo) Antibody ELISA kit, 5x96 tests
RV-400610-1	Recombivirus Bovine/Cow Anti-Foot and mouth disease virus VP-1 (FMDV-VP1, Serotypes SAT1+2+3, Combo) Antibody ELISA kit, 96 tests
RV-400610-5	Recombivirus Bovine/Cow Anti-Foot and mouth disease virus VP-1 (FMDV-VP1, Serotypes SAT1+2+3, Combo) Antibody ELISA kit, 5x96 tests

FMDS15-R-10 260626 150217P

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