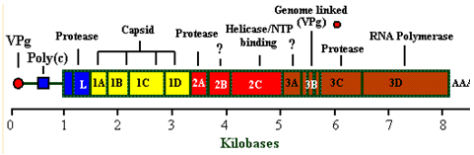
ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

**Foot and mouth disease virus serotype SAT-1, viral protein 1 Antibodies and Controls**

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| ☐ **Cat #** FMDS11-S | **Rabbit** Anti-Foot and mouth disease virus serotype SAT-1, viral protein 1 (FMDS-VP1) antiserum | **SIZE**: 100 ul |
| ☐ **Cat #** FMDS11-C | Recombinant FMD serotype SAT-1, partial viral protein (FMDS-VP1) protein control for western blot | **SIZE**:100 ul |

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 and Antibodies

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|---|---|
| **Antigen** | Recombinant purified FMDV serotype SAT-1, a.a 725-950 (cat# FMDS15-R-10) |
| **Ab Host/type** | Rabbit, Polyclonal antiserum (Cat# FMDS11-S) supplied in 0.05% azide as preservative. |
| **2-Ab** | Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates) |
| **-ve control IgG** | # 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control. |

**Cat # FMDS11-C**, Positive Control

FMDV-VP1, serotype SAT-1 was expressed in E. Coli as his-tag protein (a.a 725-950, >95%, ~26 KDa). Purified FMDV-VP1 serotype A protein for Western blot +ve control (**Cat #** FMDS11-C) is supplied in SDS-PAGE. Store at –20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should re dissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the # FMDS11-C solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA 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 **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. 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 & Immunoflourescence**: not tested.

**Cross reactivity:** FMDV-VP1 Serotype SAT-1 is conserved in serotypes: Asia 1 (66%), C (72%), O (71%), A (48%) ,SAT-2 (45%) and 3 (44%) serotypes.

**Specificity:** This antibody reacts with VP1 of FMDV serotype SAT-1 and recombinant VP1 protein**.** Antibody cross reactivity has not been established. Antibodies and recombinant proteins to various FMDV serotypes are available for control studies.

**References**: 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. Konig (2007) Vet. Microbiol. 124:1-2; Schumann (2008) Virus Genes 36 (2), 401-413.

*This product is for In vitro research use only.

### Related material available from ADI

FMDA11-C Recombinant FMD serotype A viral protein 1 (FMDA1-VP1) control for western blot
FMDA11-S Recombinant Foot and mouth disease virus serotype A viral protein 1 (FMDA1-VP1) control for western blot
FMDA15-R-10 Recombinant (E.coli) Foot and mouth disease virus serotype A viral protein 1 (FMDA-VP, his tag) purified
FMDA16-C Recombinant FMD (FMDA1-VP1) serotype A1 protein control for western blot
FMDA16-R-10 Recombinant (E.coli) Foot and mouth disease serotype A1 Viral protein 1 (FMDA1-VP1, his tag) purified
FMDA16-S Anti-Foot and mouth disease virus serotype A1, viral protein 1 (FMDA1-VP1) antiserum
FMDOV11-M Mouse monoclonal Anti-Foot and mouth disease virus serotype O, IgG
FMDOV12-M Mouse monoclonal Anti-Foot and mouth disease virus non-structural proteins (NSP) IgG
FMDOVP11-C Recombinant FMD serotype O, viral protein 1 (FMDO-VP1) control for western blot
FMDOVP11-S Anti-Foot and mouth disease virus serotype O, viral protein 1 (FMDO-VP1) antiserum
FMDOVP15-R-10 Recombinant (E-coli) Foot and mouth disease virus, serotype O viral protein 1 (FMDOVP1, his tag) purfied

FMDS21-S 260615 150112P

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