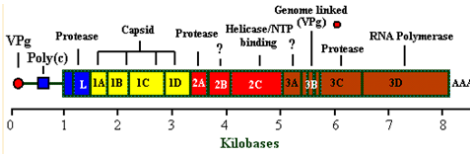
ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

**Foot and mouth disease virus serotype O, 2A (FMDO-2A) Antibodies and Controls**

| | | |
|---|---|---|
| □ **Cat** # FMDO2A11-S | **Rabbit** Anti-Foot and mouth disease virus serotype O, 2A (FMDO-2A) peptide IgG, aff pure | **SIZE**:100 ul |
| □ **Cat** # FMDO2A11-A | Anti-Foot and mouth disease virus serotype O, 2A (FMDO-2A) peptide IgG, aff pure | **SIZE**:100 ug |
| □ **Cat** # FMDO2A11-P | Foot and mouth disease virus serotype O, 2A (FMDO-2A) Control/blocking peptide | **SIZE**:100 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 and Antibodies

| | |
|---|---|
| **Antigen** | Recombinant purified FMDO-2A, serotype O |
| **Ab Host/type** | Rabbit, Polyclonal unpurified antiserum (#FMDO2A11-S) and IgG, purified over agarose (Cat # FMDO2A11-A) |
| **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# FMDO2A11-P,** control peptide

Purified FMDV-2A serotype O peptide sequence was expressed in E.coli, (>95%). For western blot, +ve control peptide (**Cat #** FMDO2A11-P) is supplied in SDS-PAGE. Store at –20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should re dissolved 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 # FMDO2A11-P 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 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.

**Specificity & Cross-reactivity :** The antibodies react with 2A region of FMDV serotype O. FMDV-2A serotype O is conserved in A,C, Asia 1, O, SAT1,2 and 3 serotypes. However, antibody cross reactivity has not been established. Antibodies and recombinant proteins to various FMDV strains 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. Tully (2008) Virology 382: 250–256; Pereda A.J (2002) Arch. Virol. 147:2225-2230; Schumann (2008) Virus Genes 36: 401-413.

*This product is for In vitro research use only.

**Related material available from ADI**

FMDO2A11-A Anti-Foot and mouth disease virus serotype O, 2A (FMDO-2A) peptide IgG, aff pure
FMDO2A11-S Anti-Foot and mouth disease virus serotype O, 2A (FMDO-2A) peptide antiserum
FMDO2A11-P Foot and mouth disease virus serotype O, 2A (FMDO-2A) Control/blocking peptide
FMDO2B11-C Recombinant Foot and mouth disease virus serotype O, 2B (FMDO-2B) protein control for western blot
FMDO2B11-S Anti-Foot and mouth disease virus serotype O, 2B (FMDO-2B) protein antiserum
FMDO2B15-R-10 Recombinant (E-coli) Foot and mouth disease virus serotype O, 2B (FMDO-2B, his tag) purified
FMDO2C11-C Recombinant FMD serotype O, 2C (FMDO-2C) protein control for western blot
FMDO2C11-S Anti-Foot and mouth disease virus serotype O, 2C (FMDO-2C) protein antiserum
FMDO2C15-R-10 Recombinant (E.coli) Foot and mouth disease virus serotype O 2C (FMDO-2C, GST tag) purified
FMDO3AB11-C Recombinant Foot and mouth disease virus serotype O, 3AB (FMDO-3AB) protein control for western blot
FMDO3AB11-S Anti-Foot and mouth disease virus serotype O, 3AB (FMDO-3AB) protein antiserum



Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com