ALPHA DIAGNOSTIC INTERNATIONAL

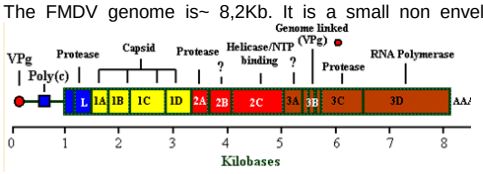
Product Specification Sheet

Foot and mouth disease virus serotype O 2C (FMDO-2C) Antibodies and Controls

□ **Cat** # FMDO2C11-S	**Rabbit** Anti-FMD, serotype O, 2C (FMDO-2C) protein antiserum	**SIZE**: 100 ul
□ **Cat** # FMDO2C11-C	Recombinant FMD serotype O 2C (FMDO-2C) 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

Antigen	Recombinant purified FMDO-2C, serotype O (cat# FO2C15-R-10)
Ab Host/type	Rabbit, Polyclonal antiserum (Cat # FO2C11-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 # FO2C11-C, positive control

FMDV-2C, serotype O was expressed in E. Coli with a his-tag protein (full length >95%, ~64 KDa). Purified FMDV-2B serotype O protein for Western blot +ve control (Cat# FO2C11-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 # FO2C11-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 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 : This antibody reacts with 2C protein of FMDO and recombinant 2C protein. FMDV-2C serotype O is highly conserved in A (97%),C (96%), Asia 1 (98%), SAT1 (96%), 2 (93%) and 3 (88%) serotypes. However, antibody cross reactivity has not been established. Antibodies and recombinant proteins for several 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. 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

FO2A11-A Anti-FMD, serotype O, 2A (FMDO-2A) peptide IgG, aff pure
FO2A11-P FMD, serotype O, 2A (FMDO-2A) Control/blocking peptide
FO2A11-S Anti-FMD, serotype O, 2A (FMDO-2A) peptide antiserum
FO2B11-S Anti-FMD, serotype O, 2B (FMDO-2B) protein antiserum
FO2B15-R-10 Recombinant (E. coli) Purified FMD, serotype O, 2B (FMDO-2B) (>95%)
FO2C11-S Anti-FMD, serotype O, 2C (FMDO-2C) protein antiserum
FO2C15-R-10 Recombinant (E. coli) Purified FMD, serotype O 2C (FMDO-2C) (>95%) GST tag
FO3AB11-S Anti-FMD, serotype O, 3AB (FMDO-3AB) protein antiserum
FO3AB15-R-10 Recombinant (E. coli) Purified FMD, serotype O, 3AB (FMDO-3AB) (>95%)
FO3C11-S Anti-FMD, serotype O, 3C (FMDO-3C) protein antiserum
FO3C15-R-10 Recombinant (E. coli) Purified FMD, serotype O, 3C (FMDO-3C) (>95%)
FO3D11-S Anti-FMD, serotype O, 3D (FMDO-3D) protein antiserum
FO3D15-R-10 Recombinant (E. coli) Purified FMD, serotype O, 3D (FMDO-3D) (>95%)
FOVP11-S Anti-FMD, serotype O, viral protein 1 (FMDO-VP1) protein antiserum
FOVP15-R-10 Recombinant (E. coli) Purified FMD, serotype O viral protein 1 (FMDO-VP1) (>95%)

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