ALPHA DIAGNOSTIC INTERNATIONAL

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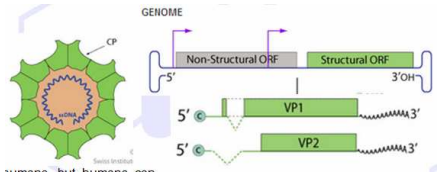
Product Specification Sheet

Minute virus of mice (MVM) Antibodies and Controls

☐ **Cat #** MVMVP21-S	**Rabbit** Anti- **Minute virus of mice (MVM)** Capsid Protein 2 (MVM-VP2) antiserum	**SIZE**: 100 ul
☐ **Cat #** MVMVP21-C	Recombinant MVM-VP2 protein WB positive control	**SIZE**: 100 ul

Animals, just like humans, are susceptible to various bacterial and viral infections. Animals are used widely in biomedical research. Laboratory animal infections may compromise the health of the animals and ultimately the research data derived from them. Microbial infections alter not only the animal behavior but also the biological responses. Apart from the use of whole animals for experimentations, numerous animal cell lines and proteins are also derived from animals and used in biomedical research. So there is great potential for the diseases to spread very quickly.



Parvoviruses (from Latin parvus meaning small) are typically linear, non-segmented single-stranded DNA viruses, with an average genome size of 5Kb. The viral capsid of a parvovirus is made up of two or three proteins, known as **VP1-3** that form an icosahedral structure that is resistant to acids, bases, solvents and temperature up to 50°C. Structural protein (NS1-2) are conserved and involved in transcription and virus replication. Capsid proteins (VP1-3) exhibit heterogeneity among different parvoviruses. Parvovirus diagnosis is by serology and ELISA. MPV is most pathogenic for haematopoietic cells than **mouse parvoviruses (MPVs): Species**: **Minute virus of mouse (MVM) or mice minute virus (MMV), Kilham rat virus (KRV**), Rat **H-1** virus (**Toolan's virus**), mouse parvovirus (MPV), hamster (HaPV) and rat parvovirus (RPV-1a). **Natural hosts**: Vertebrates.

Minute virus of mice (MVM) and mouse parvovirus (MPV or MPV-1) are among the most prevalent infectious agents detected in contemporary laboratory mouse colonies, with approximately 45 % of USA research institutions harboring these infectious agents and MPV being among the most prevalent viruses detected in research mice. Various clinical disease syndromes in mice have been associated with MVM infection and both MVM and MPV can have deleterious effects on research due to in vitro and in vivo immunomodulatory effects and contamination of cell cultures and tissues originating from mice. As a result, murine parvovirus infections comprise one of the most significant infectious disease problems encountered in contemporary laboratory animal research facilities.

Source of Antigen and Antibodies

Antigen	Recombinant purified full length MVM-VP2 protein
Ab Host/type	Rabbit, Polyclonal antiserum (Cat # MVMVP21-S) supplied in 0.05% azide as preservative.
2-Ab	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

MVM-VP2 was expressed in E. Coli as his-tag fusion protein (full length, purity >95%, ~65 KDa). Purified MPV-VP2 protein for Western blot +ve control (**Cat #** MVMVP21-C) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of # MVMVP21**-C** for good visibility with antibody Cat # MVMVP21-S. Store at –20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve 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 # MVMVP21**-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

MVM-VP1 and VP2 are produced as a results of alternative splicing and the two proteins have significant overlap (see fig above). MVM-VP2 shares signigicant sequence conservation with the related mouse parvoviruses (~74%) and rat minute virus (72%), Kilham rat virus (71%) and canine parvovirus (52%). There is significant sequence homology of VP2 with related parvoviruses: Mouse and rat minute virus VP2 (69-72%), Kilham rat virus (65-67%), Hamster parvovirus (66%), rat parvovirus (60%) and canine parvovirus 2a/b & mink enteritis virus, blue fox parvovirus, Feline panleukopenia virus (52%). Antibody crossreactivity of MVM-VP2 with various related VP2s has not been studies. Recombinant protein of MPV-VP2 (#MVMVP21-R-10) is available for control studies.

References: Ball-Goodrich LJ (1994) J. Virol. 68, 6476-3486; Brownstein DG (1991) Lab. Invest. 65, 357-364; Astell CR (1986) J. Virol. 57, 656-669; sahl R (1985) Nucl. Acid., red. 13, 3617-3633; Clemens KE (1990) J. Virol. 64, 3967-3973; Cotmore SF (1986) J. Virol. 58, 734-732; Hueffer K (2003) Curr. Opin. Microbiol. 6, 392-398; Kilham L (1970) Proc Soc Exp Biol Med 133, 1447–1452; Labieniec-Pintel, L (1986) J. Virol. 57, 1163-1167; Livingston RS (2003) Clin Diagn Lab Immunol 9, 1025–1031

*This product is for In vitro research use only.

Related material available from ADI

MVMVP21-MNC Mouse Anti-Parvovirus (MPV) Capsid Protein 2 (VP2) antibody negative control serum
MVMVP21-MPC Mouse Anti-Parvovirus (MPV) Capsid Protein 2 (VP2) antibody positive control serum
MVMVP21-R-10 Recombinant (E. coli, his-tag, ~60 Kda) Parvovirus (MPV) Capsid Protein 2 (VP2), full length (>95% pure)
MPV22-RNC Rat Anti-Parvovirus (MPV) Capsid Protein 2 (VP2) antibody negative control serum
MPV22-RPC Rat Anti-Parvovirus (MPV) Capsid Protein 2 (VP2) antibody positive control serum

MVMVP21-S 140925P

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