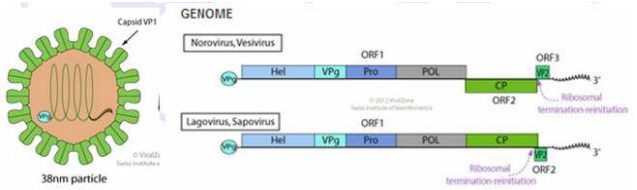
ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Murine Norovirus 1 (MNV-1) Capsid Protein 1 (VP1)Antibodies and Controls

□ **Cat #** MNV14-S	**Rabbit** Anti-Murine Norovirus 1 (MNV-1) Capsid Protein 1 (MNV-VP1) antiserum	**SIZE**: 100 ul
□ **Cat #** MNV14-C	Recombinant MNV-VP1 protein Western blot +ve control	**SIZE**: 100 ul

Noroviruses are a genetically diverse group of single-stranded RNA, non enveloped viruses in the Caliciviridae family. The viruses are transmitted by fecally contaminated food or water, by person-to-person contact, and via aerosolization of the virus and subsequent contamination of surfaces. Noroviruses are the most common cause of viral gastroenteritis in humans. Norovirus affects people of all ages. The genus name Norovirus is derived from Norwalk virus, which causes approximately 90% of epidemic nonbacterial outbreaks of gastroenteritis around the world, and may be responsible for 50% of all foodborne outbreaks of gastroenteritis in the United States.



MNV is closely related to the human Norovirus. Mouse norovirus (MNV), a non-enveloped ss-RNA virus (*Calciviridae)* and the most prevalent viral infection in laboratory animal facilities, is highly contagious in causing a mild, persistent enteric infection. MNV replicates in macrophages and dendritic cells, with the potential to alter research data. Noroviruses contain a positive-sense RNA genome of approximately 7.5 kbp, encoding a major structural protein (VP1) of about 58~60 kDa and a minor capsid protein (VP2). The most variable region of the viral capsid is the P2 domain,which contains antigen-presenting sites and carbohydrate-receptor binding regions.

MNV infection may be diagnosed by ELISA, measuring rapidly rising antibody titers (8-12 days after infection) to MNV antigen. Mice infected with MNV are not suitable for animal research; in addition to lung changes, MNV may predispose to secondary bacterial infection, cause infertility, and death in susceptible strains. Besides infecting animals, MNV may also contaminate cell lines, transplantable tumors and other biological products; these should be tested by mouse antibody production (MAP), using ELISA to detect anti-MNV after immunization. A recent study in the USA found approx. 22% mouse samples were positive for MNV.

Source of Antigen and Antibodies

Antigen	Recombinant purified MNV-VP1 or capsid protein (MNV15-R-10)
Ab Host/type	Rabbit, Polyclonal antiserum (Cat # MNV14-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

MNV-VP1 was expressed in E. Coli as his-tag fusion protein (full length, purity >95%, ~61 KDa). Purified MNV-Vp1 protein for Western blot +ve control (**Cat #** MNV14-C) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of # MNV14-**C** for good visibility with antibody Cat # MNV14-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 # MNV14-**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

MNV-VP1 protein is highly conserved in various isolates of MNV (groups 1-7, ~94-100% identity). Antibodies to MNV-VP1 are expected to crossreact with VP1 proteins from various MNV subtypes. MNV-VP1 is less conserved in human calcivirus NLV/mex7076/1999, Norovirus Hu/GI and other human isolates (42-44%). However, antibody crossreactivity has not been established. Recombinant purified MNV-VP1 protein is available for control studies.

References: Hsu CC (2005) Clin. Diagn. Lab. Immunol. 12, 1145-1151; Ferner WT (2009) J. Clin. Microbiol. 25, 1364-1369; Henderson KS (2008) Lab. Anim. 37, 314-320; kelmenson J A(2009) Comp. Med. 59, 27-36; Iencioni LC (2008) Comp. Med. 58, 522-533; Mumphrey SM (81) J. Virsol. 3251-3263; Wobus CE (2006) J. Virol. 80, 5104-5112.

*This product is for In vitro research use only.

Related material available from ADI

MNV11-MNC Mouse Anti-Norovirus 1 (MNV-1) Capsid Protein 1 (VP1) antibody negative control serum
MNV11-MPC Mouse Anti-Norovirus 1 (MNV-1) Capsid Protein 1 (VP1) antibody positive control serum
MNV12-RNC Rat Anti-Norovirus 1 (MNV-1) Capsid Protein 1 (VP1) antibody negative control serum
MNV12-RPC Rat Anti-Norovirus 1 (MNV-1) Capsid Protein 1 (VP1) antibody positive control serum
MNV14-C Recombinant (E. coli, his-tag, ~61 Kda) Norovirus 1 (MNV-1) Capsid Protein 1 (VP1) control for Western blot
MNV14-S Rabbit Anti-Norovirus 1 (MNV-1) Capsid Protein 1 (VP1) antiserum
MNV15-R-10 Recombinant (E. coli, his-tag, ~61 Kda) Norovirus 1 (MNV-1) Capsid Protein 1 (VP1), full length (>95% pure)

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