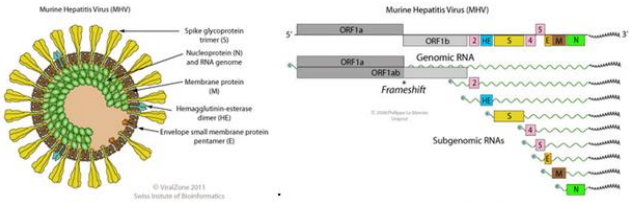
ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Mouse Hepatitis virus (MHV/Coronavirus) Spike Protein S1 Antibodies and Controls

Cat # MHVS13-S	**Rabbit** Anti-Mouse Hepatitis virus Spike Protein S1 (MHV-S1) antiserum	**SIZE**: 100 ul
Cat # MHVS14-C	Recombinant Hepatitis virus Spike Protein S1 (MHV-S1) WB +ve 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. Animals or animal-derived products are transported from one part of the world to another in a matter of days. So there is great potential for the diseases to spread very quickly. Many infections are asymptomatic and without any overt clinical symptoms. Detection of microbial infections has relied largely on serological screening and presence of microbial antigens or antibodies.



Mouse hepatitis virus is a virus of the family Coronaviridae, genus coronavirus. Mouse hepatitis virus (MHV) is a coronavirus that causes an epidemic murine illness with high mortality, especially among colonies of laboratory mice. Prior to the discovery of SARS-CoV, MHV had been the best-studied coronavirus both in vivo and in vitro as well as at the molecular level. Some strains of MHV cause a progressive demyelinating encephalitis in mice which has been used as a murine model for multiple sclerosis. Coronaviruses are enveloped viruses with a positive-sense RNA genome and with a nucleocapsid of helical symmetry. The genomic size of coronaviruses ranges from approximately 26 to 32 kb, extraordinarily large for an RNA virus. The name "coronavirus" is derived from the Latin corona, meaning crown or halo, and refers to the characteristic appearance of virions under electron microscopy (E.M.) with a fringe of large, bulbous surface projections creating an image reminiscent of the solar corona. This morphology is actually formed by the viral spike (S) peplomers, which are proteins that populate the surface of the virus and determine host tropism. Coronaviruses primarily infect the upper respiratory and gastrointestinal tract of mammals and birds. Four to five different currently known strains of coronaviruses infect humans. Proteins that contribute to the overall structure of all coronaviruses are the spike (S), envelope (E), membrane (M) and nucleocapsid (N). MHV diagnosis by serology (histopathology, PCR, IFA or ELISA). MHV spike protein S1 precursor (precursor 1324-aa, 15-1324 aa mature protein; 15-717 aa (S1); 718-1324 (S2). MHV-S1 protein has been used for the diagnosis of MHV infection.

Source of Antigen and Antibodies

Antigen	Recombinant purified MHV-S1 protein (#MHVS15-R-10)
Ab Host/type	Rabbit, Polyclonal antiserum (Cat # MHVS13-S) supplied in 0.1% 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

MHV-S1 protein was expressed in E. Coli as his-tag fusion protein (extracellular domain, purity >95%, ~45 KDa). Purified MHV-S1 protein for Western blot +ve control (**Cat #** MHVS14-C) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of # MHVS14**-C** for good visibility with antibody Cat # MHVS13-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 # MHVS14**-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 + 0.1% 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 **–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. NOT TESTED

ELISA (1:10-50K; using 50-100 ng antigen/well).

Histochemistry & Immunofluorescence: not tested.

Specificity & Cross-reactivity

Murine MHV-S1 protein (MHV/A59 strain # MHVS15-R-10) sequence is significantly conserved in related coronaviruses: murine MHV/JHM strain (78%), murine MHV-3 (76%), rat corona virus parker (67%), rat SDAV (66%), human coronavirus Hku1 (53%), and bovine (51%). Antibody crossreactivity has not been established. Recombinant purified MHV-S1 protein is available for control studies.

References: Barthold SW (1993) Disease. Contemp Topics Lab Anim Sci 43: 276-284; Homberger FR . (1997) Virus Lab Anim 31: 97-115; Compton SR (1998) Lab Anim Sci 48:6-7; Fujiwara KS (1976) Lab. Anim. Sci. 26, 153-159; Rowe WP (1963) Prox. Soc. Exp. Biol. Med. 112, 161-165; Peters RL (1979) J. Clin. Microbiol. 10, 595-597; Luytjes W (1987) Virol. 161, 479-487

*This product is for In vitro research use only.

Related material available from ADI

AE-300700-1 RecombiVirus Mouse Hepatitis virus (MHV/Coronavirus) IgG ELISA Kit, 96 tests
AE-300710-1 RecombiVirus Rat Hepatitis virus (MHV/Coronavirus) IgG ELISA Kit, 96 tests
MHVS13-S Rabbit Anti-Mouse Hepatitis virus (MHV/Coronavirus) Spike Protein S1 antiserum
MHVS14-C Recombinant (E. coli, his-tag, ~63.5 Kda) Hepatitis virus (MHV/Coronavirus) Spike Protein S1 protein control for Western blot
MHVS15-R-10 Recombinant (E. coli, his-tag, ~63.5 Kda) Hepatitis virus (MHV/Coronavirus) Spike Protein S1 (>95% pure)

MHVS13-S 240213 140924P

Alpha Diagnostic Intl Inc., 4638 N Loop 1604 West, San Antonio, TX 78249, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com