

**CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET**

<b>Product name</b>	sMD-2 and sMD-2/TLR4, Human, clone 4H1		
<b>Catalog number</b>	HM2243-20UG		
<b>Lot number</b>	-	<b>Expiry date</b>	-
<b>Volume</b>	200 µl	<b>Amount</b>	20 µg
<b>Formulation</b>	0.2 µm filtered in PBS+0.1%BSA	<b>Concentration</b>	100 µg/ml
<b>Host Species</b>	Mouse IgG1	<b>Conjugate</b>	None
<b>Endotoxin</b>	<24 EU/mg	<b>Purification</b>	Protein G
<b>Storage</b>	4°C		

**Application notes**

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #								
Yes			•		•	•		•
No								
N.D.	•	•		•			•	

N.D.= Not Determined; IHC = Immuno histochemistry; F = Frozen sections; P = Paraffin sections; IF = Immuno Fluorescence; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IP = Immuno Precipitation; W = Western blot

Dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50.

- FS: the antibody can be used to inhibit LPS binding to MD-2 *in vitro*. For functional studies, dilutions have to be made according to the amounts of MD-2 to be inactivated.

**General Information**

<b>Description</b>	The monoclonal antibody 4H1 reacts with soluble MD-2 (sMD-2) and the sMD-2/Toll-like receptor 4 (TLR4, CD284) complex. TLRs belong to a family of proteins that specifically recognizes and senses microbial products. They are highly conserved throughout evolution and act as innate immune recognition receptors against many pathogens. TLR4 is a functional receptor for gram-negative bacterial lipopolysaccharides (LPS). TLR4 associates with MD-2 which is absolutely required for LPS-induced activation of TLR4. MD-2 exists as a cell surface protein in association with TLR4. It also exists as secreted forms consisting of MD-2 monomer and multimers. Circulating sMD-2 is mainly present as a doublet of ~20 and 25 kD, representing differentially glycosylated forms. Unlike TLR4, sMD-2 binds directly LPS without the need of soluble CD14 (sCD14). However, LPS-MD-2 interactions are increased when LPS is pretreated with CD14. Only monomeric sMD-2 is biologically active and able to associate with TLR4 and LPS. sMD-2 circulates in plasma of healthy individuals as a non-active, polymeric protein. In septic plasma, the total amount of sMD-2 was strongly elevated and contained both sMD-2 polymers and monomers. Soluble MD-2 is proposed to be an important mediator of organ inflammation during sepsis. During experimental human endotoxemia, the monomeric and total sMD-2 content in plasma increased with the kinetics of an acute phase protein. This parallels enhanced TLR4 costimulatory activity. In vitro studies revealed that sMD-2 release appears to be restricted to endothelial and dendritic cells. The monoclonal antibody 4H1 reacts with both the monomeric and the polymeric form of sMD-2. In addition, the monoclonal antibody 4H1 is able to inhibit LPS binding to MD-2. It does not cross-react with mouse MD-2.
<b>Immunogen</b>	Baculovirally expressed His-tagged human MD-2.
<b>Aliases</b>	Lymphocyte antigen 96, ESOP-1, LY96, CD284
<b>References</b>	1. Viriyakosol, S et al; Characterization of monoclonal antibodies to human soluble MD-2 protein. Hybridoma 2006, 25: 349
<b>Storage&amp;stability</b>	Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year.

**Precautions**

For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.

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We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC  
Brenda Teunissen

Date  
09/12/2020

Do you have any questions or comments regarding this product? Please contact us via [support@hycultbiotech.com](mailto:support@hycultbiotech.com).