Human MD-2 Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF1787

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human MD-2 in direct ELISAs and Western blots. In these formats, less than 1% cross-reactivity with recombinant human MD-1 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant human MD-2 Glu17-Asn160 Accession # NP_001123946
Endotoxin Level	<0.2 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Human MD-2 (Catalog # 1787-MD)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month from date of receipt, 2 to 8 °C, reconstituted. ● 6 months from date of receipt, -20 to -70 °C, reconstituted.

BACKGROUND

MD-2, also known as lymphocyte antigen 96 and ESOP-1, is a secreted glycoprotein that shares conserved cysteine residues and significant sequence similarity (23%) with MD-1. The gene of human MD-2 encodes a 160 amino acid residue (aa) precursor protein with a 16 aa signal peptide and a 144 aa mature protein, which contains 2 N-glycosylation sites (1). Recombinant secreted MD-2 has been found to exist as disulfide-linked dimers and oligomers (2).

Both MD-1 and MD-2 are accessory molecules that associate with the extracellular leucine-rich repeats (LRR) of Toll-like receptor (TLR) family members, which are type I transmembrane receptors that regulate innate immune responses to microbial pathogens (3, 4). MD-1 binds to RP105 on B cells and macrophages to form the signaling receptor complex for lipopolysaccharide (LPS), a constituent of the outer membrane of Gram-negative bacteria. Similarly, MD-2 interacts with TLR-4 to form the heteromeric receptor that confers LPS responsiveness. MD-2 also associates with TLR-2, albeit with less avidity, to confer responsiveness to cell wall components from both Gram-positive and Gram-negative bacteria. MD-1 and MD-2 are also required for the correct targeting of the TLRs to the cell surface. Although MD-2 glycosylation is not crucial for its surface expression and interaction with TLR-4, it is required for LPS binding and signaling (5).

References:

1. Shimazu, R. *et al.* (1999) J. Exp. Med. **189**:1777.
2. Visintin, A. *et al.* (2001) Proc. Natl. Acad. Sci. USA **98**:12156.
3. Nagai, Y. *et al.* (2002) Nature Immunology **3**:667.
4. Akashi, S. *et al.* (2003) J. Exp. Med. **198**:1035.
5. Correia, J. and R. Ulevitch (2002) J. Biol. Chem. **277**:1845.