SANTA CRUZ BIOTECHNOLOGY, INC.

MD-2 (FL-160): sc-20668

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Lipopolysaccharide (LPS) is the principal proinflammatory component of the Gram-negative bacterial envelope. The lipopolysaccharide (LPS) receptor is a multi-protein complex that consists of at least three proteins, CD14, TLR4 and MD-2. Each of these proteins are glycosylated. Specifically, MD-2 contains two N-linked glycosylation sites at positions Asn(26) and Asn(114). MD-2 is indispensable for TLR4-dependent LPS responses because cells expressing TLR4/MD-2, but not TLR4 alone, respond to LPS. Intestinal epithelial cells (IEC) express low levels of TLR4 and MD-2 and are LPS unresponsive. T cell-derived cytokines lead to increased expression of TLR4 and MD-2, and LPS-dependent pro-inflammatory cytokine secretion in IEC. The human LY96 gene maps to chromosome 8q21.11 and encodes a 162 amino acid protein with a predicted 16-amino acid signal peptide.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 605243. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Hajjar, A.M., et al. 2002. Human Toll-like receptor 4 recognizes host-specific LPS modifications. Nat. Immunol. 3: 354-359.
3. da Silva Correia, J. and Ulevitch, R.J. 2002. MD-2 and TLR4 N-linked glycosylations are important for a functional lipopolysaccharide receptor. J. Biol. Chem. 277: 1845-1854.
4. Nagai, Y., et al. 2002. Requirement for MD-1 in cell surface expression of RP105/CD180 and B-cell responsiveness to lipopolysaccharide. Blood 99: 1699-1705.

CHROMOSOMAL LOCATION

Genetic locus: LY96 (human) mapping to 8q21.11; Ly96 (mouse) mapping to 1 A3.

SOURCE

MD-2 (FL-160) is a rabbit polyclonal antibody raised against amino acids 1-160 representing full length MD-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

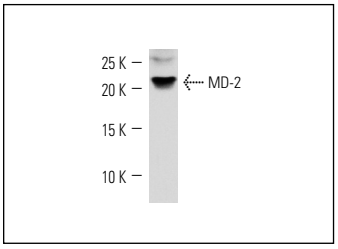
APPLICATIONS

MD-2 (FL-160) is recommended for detection of MD-2 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MD-2 siRNA (h): sc-35889, MD-2 siRNA (m): sc-35890, MD-2 shRNA Plasmid (h): sc-35889-SH, MD-2 shRNA Plasmid (m): sc-35890-SH, MD-2 shRNA (h) Lentiviral Particles: sc-35889-V and MD-2 shRNA (m) Lentiviral Particles: sc-35890-V.

Molecular Weight of MD-2: 20-25 kDa.

DATA



MD-2 (FL-160): sc-20668. Western blot analysis of MD-2 expression in mouse spleen tissue extract.

SELECT PRODUCT CITATIONS

1. Blais, D.R., et al. 2005. LBP and CD14 secreted in tears by the lacrimal glands modulate the LPS response of corneal epithelial cells. Invest. Ophthalmol. Vis. Sci. 46: 4235-4244.
2. Maruyama, K., et al. 2006. Receptor activator of NFκB ligand and osteoprotegerin regulate proinflammatory cytokine production in mice. J. Immunol. 177: 3799-3805.
3. Tissières, P., et al. 2008. Soluble MD-2 is an acute-phase protein and an opsonin for Gram-negative bacteria. Blood 111: 2122-2131.
4. Baird, A., et al. 2012. Cell surface localization and release of the candidate tumor suppressor Ecrg4 from polymorphonuclear cells and monocytes activate macrophages. J. Leukoc. Biol. 91: 773-781.
5. Ismail, Y., et al. 2013. The effects of oral and enteric *Campylobacter concisus* strains on expression of TLR4, MD-2, TLR2, TLR5 and COX-2 in HT-29 cells. PLoS ONE 8: e56888.