



## MD-1 (K-17): sc-20614

### BACKGROUND

RP105 (CD180) was originally discovered as a mouse B cell surface molecule that transmits an activation signal. This signal leads to resistance against irradiation-induced apoptosis and massive B cell proliferation. RP105 is associated with another molecule, MD-1, which has an important role in the cell surface expression of RP105. MD-1, also known as lymphocyte antigen 68 and RP105 associated protein, associates with and regulates the cell surface expression of RP105. RP105/MD-1 constitutes an LPS-signaling complex on B cells and, like MD-2, enhances the LPS signaling via TLR4. MD-1 contains 162 amino acids and has a predicted 19 amino acid signal peptide and two N-glycosylation sites. MD1 is highly expressed in B cells, monocytes and tonsil, and is localized on the surface of cells despite its lack of a transmembrane region.

### REFERENCES

- Miura, Y., Shimazu, R., Miyake, K., Akashi, S., Ogata, H., Yamashita, Y., Narisawa, Y. and Kimoto, M. 1998. RP105 is associated with MD-1 and transmits an activation signal in human B cells. *Blood* 92: 2815-2822.
- Miyake, K., Ogata, H., Nagai, Y., Akashi, S. and Kimoto, M. 2000. Innate recognition of lipopolysaccharide by Toll-like receptor 4/MD-2 and RP105/MD-1. *J. Endotoxin Res.* 6: 389-391.
- Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 605241. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Nagai, Y., Shimazu, R., Ogata, H., Akashi, S., Sudo, K., Yamasaki, H., Hayashi, S., Iwakura, Y., Kimoto, M. and Miyake, K. 2002. Requirement for MD-1 in cell surface expression of RP105/CD180 and B cell responsiveness to lipopolysaccharide. *Blood* 99: 1699-1705.
- Clark, DA., Yu, G., Arck, P.C., Levy, G.A. and Gorczynski, R.M. 2003. MD-1 is a critical part of the mechanism causing Th1-cytokine-triggered murine fetal loss syndrome. *Am. J. Reprod. Immunol.* 49: 297-307.
- Hadidi, S. and Gorczynski, R.M. 2004. MD-1 expression regulates direct and indirect allorecognition. *Tissue Antigens* 63: 132-141.
- Tsuneyoshi, N., Fukudome, K., Kohara, J., Tomimasu, R., Gauchat, J.F., Nakatake, H. and Kimoto, M. 2004. The functional and structural properties of MD-2 required for lipopolysaccharide binding are absent in MD-1. *J. Immunol.* 174: 340-344.
- Zhang, X., Chen, B.C., Xiang, F.L., Chang, S., Zhou, H.M., Du, D.F., Yuan, J. and Chen, Z.K. 2005. Inhibition of MD-1 expression by immunosuppressants or antisense oligodeoxynucleotides on skin allograft survival in mice. *Transplant. Proc.* 37: 1965-1967.
- LocusLink Report (LocusID: 17084). <http://www.ncbi.nlm.nih.gov/LocusLink/>

### CHROMOSOMAL LOCATION

Genetic locus: LY86 (human) mapping to 6p25.1; Ly86 (mouse) mapping to 13 A3.3.

### RESEARCH USE

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

### SOURCE

MD-1 (K-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MD-1 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.

Blocking peptide available for competition studies, sc-20614 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

MD-1 (K-17) is recommended for detection of MD-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-1 siRNA (h): sc-40734 and MD-1 siRNA (m): sc-40735.

Molecular Weight of MD-1: 28 kDa.

Positive Controls: BALB/c splenocytes.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### STORAGE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.