

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived

Mouse MD-1 (Asp20 - Ser162) Accession # O88188	IEGRGGSGGGSGGGS	10-His tag
N-terminus		C-terminus

N-terminal Sequence Asp20

Analysis

Predicted Molecular Mass 18.5 kDa

SPECIFICATIONS

SDS-PAGE 29 kDa, reducing conditions

Activity Measured by its ability to bind rmRP105/Fc Chimera in a functional ELISA.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 µg/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, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

MD-1 is a secreted glycoprotein that was originally identified as a *v-myb*-regulated gene from avian myeloleukemia virus-transformed chicken myeloblasts (1). The mouse homologue of chicken MD-1 (also known as lymphocyte antigen 86) was subsequently discovered as a molecule that is associated with RP105, a type I transmembrane glycoprotein with extracellular leucine-rich repeats (LRR) typically found in Toll-like receptor (TLR) family members. However, RP105 has a short cytoplasmic tail and lacks the Toll-IL-1 R (TIR) domain that defines the IL-1 R/TLR superfamily (2 - 4). RP105 plays an important role in B-cell activation by bacterial lipopolysaccharide (LPS). It is expressed primarily on mature B cells, dendritic cells and macrophages (4).

Mouse MD-1 cDNA encodes a 162 amino acid (aa) residue precursor protein with a putative 19 aa signal peptide and two potential N-linked glycosylation sites. It shares 40% and 66% aa sequence identity with chicken and human MD-1 respectively (2, 3). MD-1 is mainly expressed in spleen, and also detectable in liver, brain, thymus, and kidney. MD-1 is required for efficient RP105 cell surface expression and function (2 - 5). Cell surface RP105/MD-1 complex, in conjunction with TLR4, mediates the innate immune response to LPS in B-cells. Activation of the RP105 complex has been shown to protect against apoptosis, induce B-cell proliferation and upregulate B7.2, a co-stimulatory molecule (5, 6). Since MD-1 is also expressed in liver and brain where RP105 is absent, it has been speculated that MD-1 can also be associated with other LRR-containing molecules, or have additional functions outside the immune system (6).

References:

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4. Miyake, K. *et al.* (1995) J. Immunol. **154**:3333.
5. Nagai, Y. *et al.* (2002) Blood **99**:1699.
6. Ogata, H. *et al.* (2000) J. Exp. Med. **192**:23.