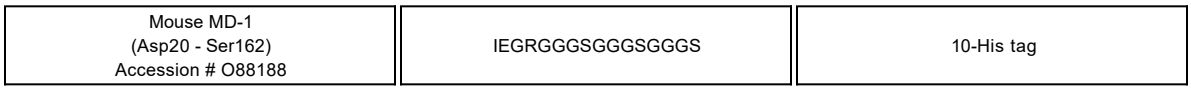
Recombinant Mouse MD-1

Catalog Number: 130-MD

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived



N-terminal Sequence Analysis	Asp20
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 with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 10 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
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:

1. Burk, O. and K. Klempnauer (1991) EMBO J. **10**:3713.
2. Miyake, K. *et al.* (1998) J. Immun. **161**:1348.
3. Miura, Y. *et al.* (1998) Blood **92**:2815.
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.

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