**DESCRIPTION**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mouse myeloma cell line, NS0-derived</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human CD300a</td>
<td>Accession # Q9UGN4</td>
</tr>
<tr>
<td>IEGRMD</td>
<td>Human IgG1 (Pro100-Lys330)</td>
</tr>
</tbody>
</table>

**N-terminal Sequence Analysis**

Leu18

**Structure / Form**

Disulfide-linked homodimer

**Predicted Molecular Mass**

44.0 kDa (monomer)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SDS-PAGE</th>
<th>60-80 kDa, reducing conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>Measured by its ability to inhibit anti-CD3-induced proliferation of stimulated human T cells. The ED₅₀ for this effect is 1-5 µg/mL. Optimal dilutions should be determined by each laboratory for each application.</td>
</tr>
<tr>
<td>Endotoxin Level</td>
<td>&lt;0.01 EU per 1 µg of the protein by the LAL method.</td>
</tr>
<tr>
<td>Purity</td>
<td>&gt;90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.</td>
</tr>
<tr>
<td>Formulation</td>
<td>Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.</td>
</tr>
</tbody>
</table>

**PREPARATION AND STORAGE**

**Reconstitution**

Reconstitute at 100 µg/mL in 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**

LMIR1, also known as CD300a, CMRF-35H, IRp60, CLM-8, and MAIR-I, is a 60 kDa glycoprotein member of the immunoglobulin superfamily (1). Human LMIR1 consists of a 163 amino acid (aa) extracellular domain (ECD) with one Ig-like V-type domain, a 21 aa transmembrane segment, and a 98 aa cytoplasmic domain that contains three immunoreceptor tyrosine-based inhibitory motifs (ITIMs) and a non-canonical ITIM (2). Alternate splicing may generate additional isoforms that either lack the Ig-like domain or contain only the cytoplasmic domain. Within the ECD, human LMIR1 shares 40% and 43% aa sequence identity with mouse and rat LMIR1, respectively. In human, LMIR1 is expressed on peripheral blood eosinophils, mast cells, neutrophils, plasmacytoid dendritic cells, and various T cell subsets (3-7).

Antibody cross-linking of LMIR1 induces phosphorylation of tyrosine residues in the cytoplasmic domain. This leads to the recruitment of phosphatases SHIP, SHP-1, and SHP-2 and inhibition of NK cell, eosinophil, and mast cell activation (2, 3, 5-7). Cross-linking of LMIR1 to other surface proteins such as SCF R or Fc epsilon RI on mast cells, Fc gamma RIIA on neutrophils, or CCR3 on mast cells and eosinophils inhibits downstream signaling from those receptors (5, 10-12). LMIR1 cross-linking also limits the in vivo activities of these cells with a subsequent reduction of allergic inflammation symptoms (4, 11, 12).

**References:**