Recombinant Mouse LAIR1 Fc Chimera

Catalog Number: 10092-LR

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived mouse LAIR1 protein

Mouse LAIR1 (Gln22-Tyr141) Accession # Q8BG84	IEGRMDP	Mouse IgG_{2a} (Glu98-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis: No results obtained. Gln22 inferred from enzymatic pyroglutamate treatment revealing Glu23.

Structure / Form: Disulfide-linked homodimer

Predicted Molecular Mass: 41 kDa

SPECIFICATIONS

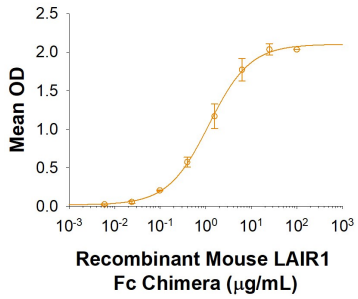
SDS-PAGE	55-62 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Bovine Collagen I is coated at 10 µg/mL, 100 µL/well, Recombinant Mouse LAIR1 Fc Chimera binds with an ED_{50} of 0.2-1.6 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped with polar packs. 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 °C under sterile conditions after reconstitution.

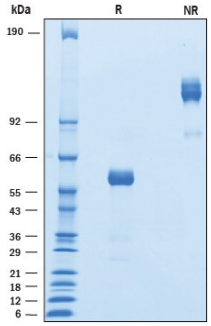
DATA

Binding Activity



When Bovine Collagen I is coated at 10 µg/mL, 100 µL/well, Recombinant Mouse LAIR1 Fc Chimera (Catalog # 10092-LR) binds with an ED_{50} of 0.2-1.6 µg/mL

SDS-PAGE



2 µg/lane of Recombinant Mouse LAIR1 Fc Chimera was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 55-62 kDa and 100-120 kDa, respectively.

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Recombinant Mouse LAIR1 Fc Chimera

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BACKGROUND

Leukocyte-associated Ig-like receptor-1 (LAIR1) is an inhibitory receptor of the Ig superfamily that is structurally related to inhibitory members of KIR and ILT/CD85 families (1-3). It is expressed on immune cells, including NK cells, T cells, B cells, monocytes, immature neutrophils, dendritic cells and most thymocytes (2-4). The 253 amino acid (aa) type I transmembrane (TM) protein contains a 21 aa signal sequence, a 124 aa extracellular domain (ECD), a 20 aa TM domain and a 98 aa cytoplasmic domain. The ECD includes one C2-type Ig-like domain and two potential N-linked glycosylation sites. Tyrosine phosphorylation of two cytoplasmic ITIM motifs results in recruitment of phosphatases and down-regulation of signaling through activating receptors (2, 3, 5). Crosslinking of LAIR1 inhibits processes such as B cell receptor-mediated activation, NK cell and T cell cytotoxicity and basophil degranulation (1-3). Four mouse LAIR1 splice variants have been identified, but it is not known whether they are expressed as proteins (3). LAIR1b, which is the major alternate transcript, lacks most of the ECD. Of the minor transcripts, LAIR1c lacks a signal sequence, and LAIR1d and 1e lack a TM sequence. All mouse splice forms are identical in the last 90 aa of the cytoplasmic domain. LAIR1 shows high-affinity binding of collagens that results in inhibition of degranulation in a basophilic leukemia cell line (6). Human and mouse LAIR1 ECD share only 32% aa identity but, where studied, sites of expression and activity are similar (3-6). Mouse LAIR1 ECD also shares 62%, 31% and 28% aa identity with rat, canine, and bovine orthologs, respectively.

References:

1. Meyaard, L. (2003) J. Biol. Regul. Homeost. Agents **17**:330.
2. Meyaard, L. *et al.* (1997) Immunity **7**:283.
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4. Verbrugge, A. *et al.* (2006) J. Leukoc. Biol. **79**:828.
5. Verbrugge, A. *et al.* (2003) Int. Immunol. **15**:1349.
6. Lebbink, R.J. *et al.* (2006) J. Exp. Med. **203**:1419.

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