# Recombinant Mouse LAIR1

Catalog Number: 4016-LR

## DESCRIPTION

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| **Source** | Mouse myeloma cell line, NS0-derived<br>Gln22-Tyr141 & Ser25-Tyr141, both with a C-terminal 6-His tag<br>Accession # Q8BG84 |
| **N-terminal Sequence Analysis** | Ser25 & No results obtained: Gln22 predicted |
| **Predicted Molecular Mass** | 14.3 kDa |

## SPECIFICATIONS

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| **SDS-PAGE** | 20-35 kDa, reducing conditions |
| **Activity** | Measured by the ability of the immobilized protein to support the adhesion of HT-29 human colon adenocarcinoma cells.<br>When 5 x $10^4$ cells/well are added to Recombinant Mouse LAIR1-coated plates (50 µg/mL with 100 µL/well), approximately 30-60% will adhere after 10 minutes at 37° C.<br>**Optimal concentration depends on cell type as well as the application or research objectives.** |
| **Endotoxin Level** | <0.10 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >90%, 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. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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| **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.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

## 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:**


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3. Lebbink, R.J. *et al.* (2004) J. Immunol. **172**:5535.
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5. Verbrugge, A. *et al.* (2003) Int. Immunol. **15**:1349.
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