

**DESCRIPTION**

<b>Source</b>	Mouse myeloma cell line, NS0-derived Gln22-His163, with a C-terminal 6-His tag Accession # Q6GTX8
<b>N-terminal Sequence Analysis</b>	No results obtained: Gln22 predicted, sequencing might be blocked
<b>Predicted Molecular Mass</b>	16.3 kDa

**SPECIFICATIONS**

<b>SDS-PAGE</b>	28-33 kDa, reducing conditions
<b>Activity</b>	Measured by the ability of the immobilized protein to support the adhesion of HeLa human cervical epithelial carcinoma cells. The ED <sub>50</sub> for this effect is 0.25-1.0 µg/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 300 µg/mL in PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

LAIR1 (leukocyte-associated Ig-like receptor-1, designated CD305) is an approximately 40 kDa type I transmembrane inhibitory glycoprotein belonging to the Ig superfamily (1-4). LAIR1 is a collagen-binding protein that is expressed in a differentiation- and activation-dependent manner on most immune cells, including T, B, NK and dendritic cells (DC), monocytes, CD34+ hematopoietic progenitors, most thymocytes, and selected granulocyte populations (2-7). Mature human LAIR1 is a 266 amino acid (aa) type I transmembrane protein that includes a 144 aa extracellular domain (ECD) with one collagen-binding C2-type Ig-like domain, and a 101 aa cytoplasmic domain with two ITIM motifs (2, 3, 8, 9). Of four potential human LAIR1 splice variants, LAIR1b has a 17 aa deletion within the ECD, but outside the Ig domain. LAIR1c differs from LAIR1b by one aa. LAIR1d has a 78 aa cytoplasmic truncation and lacks ITIM motifs. Human LAIR1 ECD shares <45% aa sequence identity with mouse, rat, bovine or canine LAIR1 ECD, but all are functional orthologs. Humans, but not rodents, also express the 152 aa secreted protein LAIR2, which shares 83% aa sequence identity with the LAIR1 ECD up to aa 140 and can block LAIR1 collagen binding (1, 2). A soluble form of LAIR1 found in plasma and urine also binds collagen (10). Adhesion of LAIR1 to collagens in the extracellular matrix, transmembrane collagens expressed by tumor cells, or antibody-mediated crosslinking of LAIR1, inhibits signals relayed by ITAM-bearing receptors and some cytokine-mediated signals (6-8, 13). Processes that are inhibited include B and T cell receptor-mediated activation, NK and T cell-mediated cytotoxicity, and basophil degranulation (1-4, 8). LAIR1 is reduced or absent on chronic lymphocytic leukemia (CLL) B cells, and some B and DC cells in systemic lupus erythematosus (SLE). Its under-expression potentially enhances CLL proliferation and SLE immune responses (7, 11, 12).

**References:**

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