

## LAIR1 Protein, Human (Biotinylated, HEK293, Avi-His)

Cat. No.:	HY-P72390
Synonyms:	Leukocyte-Associated Immunoglobulin-Like Receptor 1; LAIR-1; hLAIR1; CD305; LAIR1
Species:	Human
Source:	HEK293
Accession:	Q6GTX8 (Q22-H163)
Gene ID:	3903
Molecular Weight:	30-35 kDa

### PROPERTIES

AA Sequence	<p>           Q E E D L P R P S I      S A E P G T V I P L      G S H V T F V C R G      P V G V Q T F R L E            R E S R S T Y N D T      E D V S Q A S P S E      S E A R F R I D S V      S E G N A G P Y R C            I Y Y K P P K W S E      Q S D Y L E L L V K      E T S G G P D S P D      T E P G S S A G P T            Q R P S D N S H N E      H A P A S Q G L K A      E H         </p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.2.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

Background	<p>The LAIR1 Protein serves as an inhibitory receptor, exerting a constitutive negative regulatory influence on the cytolytic function of natural killer (NK) cells, B-cells, and T-cells. Upon activation through tyrosine phosphorylation, it recruits and activates phosphatases PTPN6 and PTPN11. LAIR1 also dampens the increase in intracellular calcium triggered by B-cell receptor ligation. Beyond its dependency on SH2-containing phosphatases, it independently modulates cytokine production in CD4+ T-cells, suppressing IL2 and IFNG while promoting the secretion of transforming growth factor beta. Additionally, LAIR1 down-regulates IgG and IgE production in B-cells and hinders the secretion of IL8, IL10, and TNF. In myeloid leukemia cell lines, LAIR1 inhibits proliferation, induces apoptosis, and prevents nuclear translocation of NF-kappa-B p65 subunit/RELA, along with the phosphorylation of I-kappa-B alpha/CHUK. Moreover, LAIR1 inhibits the differentiation</p>
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of peripheral blood precursors into dendritic cells. It interacts with the SH2 domains of tyrosine-protein phosphatases PTPN6 and PTPN11, with the interaction with PTPN6 being constitutive. Furthermore, LAIR1 binds with high affinity to extracellular matrix collagens, highlighting the functional importance of this interaction.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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