

## LAIR1 Protein, Human (144a.a, HEK293, hFc)

Cat. No.:	HY-P74784
Synonyms:	Leukocyte-Associated Immunoglobulin-Like Receptor 1; LAIR-1; hLAIR1; CD305
Species:	Human
Source:	HEK293
Accession:	Q6GTX8 (Q22-Y165)
Gene ID:	3903
Molecular Weight:	Approximately 42.8 kDa

### PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
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.
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 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.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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