

LAIR1 Protein, Mouse (HEK293, His)

Cat. No.:	HY-P70871
Synonyms:	Leukocyte-associated immunoglobulin-like receptor 1; LAIR-1; mLAIR-1; CD305; Lair1
Species:	Mouse
Source:	HEK293
Accession:	Q8BG84 (Q22-Y141)
Gene ID:	52855
Molecular Weight:	21-35 kDa

PROPERTIES

AA Sequence	<p>Q E G S L P D I T I F P N S S L M I S Q G T F V T V V C S Y S D K H D L Y N M V</p> <p>R L E K D G S T F M E K S T E P Y K T E D E F E I G P V N E T I T G H Y S C I Y</p> <p>S K G I T W S E R S K T L E L K V I K E N V I Q T P A P G P T S D T S W L K T Y</p>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
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 ₂ 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 operates as an inhibitory receptor, constitutively exerting a negative regulatory influence on the cytolytic function of natural killer (NK) cells, B-cells, and T-cells. Upon activation through tyrosine phosphorylation, LAIR1 recruits and activates phosphatases PTPN6 and PTPN11, leading to downstream inhibitory effects. Notably, it diminishes the increase in intracellular calcium triggered by B-cell receptor ligation. Beyond its role with SH2-containing phosphatases, LAIR1 independently modulates cytokine production in CD4⁺ T-cells, down-regulating IL2 and IFNG while inducing the secretion of transforming growth factor beta. It further regulates IgG and IgE production in B-cells, as well as the secretion of IL8, IL10, and TNF. LAIR1's impact extends to inhibiting proliferation, inducing apoptosis in myeloid leukemia cell lines, preventing nuclear translocation of NF-kappa-B p65 subunit/RELA, and inhibiting the phosphorylation of I-kappa-B alpha/CHUK in these cells. Moreover, it hinders the differentiation of peripheral blood precursors into dendritic cells.</p>
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Interaction-wise, LAIR1 associates with the SH2 domains of tyrosine-protein phosphatases PTPN6 and PTPN11 constitutively and binds with high affinity to extracellular matrix collagens, a functionally significant interaction.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA