Biotinylated Recombinant Human LAIR1 His-tag Avi-tag

Catalog Number: AVI2664

DESCRIPTION

Source

Human embryonic kidney cell, HEK293-derived human LAIR1 protein

Human LAIR1 (Gln22-His163) Accession # NP_002278.2	HHHHHH	Avi-tag

N-terminus C-terminus

N-terminal Sequence Analysis	No results obtained: Gln22 inferred from enyzmatic pyroglutamate treatment revealing Glu23
Structure / Form	Biotinylated via Avi-tag
Predicted Molecular Mass	18 kDa

SPECIFICATIONS

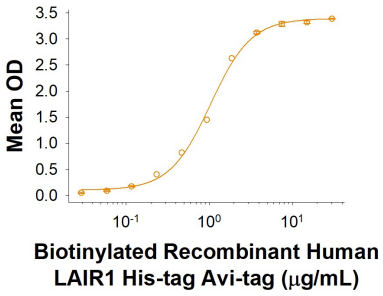
SDS-PAGE	25-38 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Bovine Collagen I is coated at 10 µg/mL, 100 µL/well, Biotinylated Recombinant Human LAIR1 His-tag Avi-tag (Catalog # AVI2664) binds with an ED_{50} of 0.6-4.8 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, 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 with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in 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.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Binding Activity



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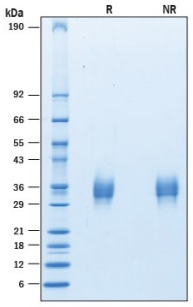
SDS-PAGE



2 µg/lane of Recombinant Human LAIR1 His-tag Avi-tag (Catalog # AVI2664) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 25-38 kDa.

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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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