

# LAIR-1 (NKTA255): sc-59281

## BACKGROUND

Leukocyte-associated Ig-like receptor-1, known as LAIR-1, is a transmembrane glycoprotein that is constitutively expressed on the majority of human peripheral blood mononuclear leukocytes. LAIR-1 is phosphorylated at the Tyr 233 and Tyr 263 residues, and once activated, LAIR-1 recruits SHP-1, an SH2 domain-containing phosphatase. SHP-1 is highly expressed in hema-topoietic cells and functions as a negative regulator of cell signaling. SHP-1 also contributes to the establishment of TCR signaling thresholds in both developing and mature T lymphocytes. The binding of LAIR-1 to SHP-1 functions as a mechanism of regulating the role of SHP-1 in cell signaling. Occupancy of LAIR-1 on human myelomonocytic leukemic cell lines inhibits proliferation and leads to programmed cell death (PCD), and cross-linking of the LAIR-1 antigen on natural killer (NK) cells results in strong inhibition of NK cell-mediated cytotoxicity. Protein kinases responsible for tyrosine phosphorylation of LAIR-1 may belong to the Src family since PP1, a Src family kinase inhibitor, significantly inhibits its phosphorylation.

## REFERENCES

1. Meyaard, L., et al. 1997. LAIR-1, a novel inhibitory receptor expressed on human mononuclear leukocytes. *Immunity* 7: 283-290.
2. Poggi, A., et al. 2000. Engagement of the leukocyte-associated Ig-like receptor-1 induces programmed cell death and prevents NF $\kappa$ B nuclear translocation in human myeloid leukemias. *Eur. J. Immunol.* 30: 2751-2758.
3. Xu, M., et al. 2000. Identification and characterization of leukocyte-associated Ig-like receptor-1 as a major anchor protein of tyrosine phosphatase SHP-1 in hematopoietic cells. *J. Biol. Chem.* 275: 17440-17446.
4. Fournier, N., et al. 2000. FDF03, a novel inhibitor receptor of the immunoglobulin superfamily, is expressed by human dendritic and myeloid cells. *J. Immunol.* 165: 1197-1209.
5. Sathish, J., et al. 2001. Constitutive association of SHP-1 with leukocyte-associated Ig-like receptor-1 in human T cells. *J. Immunol.* 166: 1763-1770.

## CHROMOSOMAL LOCATION

Genetic locus: LAIR1 (human) mapping to 19q13.42.

## SOURCE

LAIR-1 (NKTA255) is a mouse monoclonal antibody raised against LAIR-1 from natural killer cell lines B12.100 and AM.25 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LAIR-1 (NKTA255) is available conjugated fluorescein (sc-59281 FITC, 200  $\mu$ g/ml), for IF, IHC(P) and FCM.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

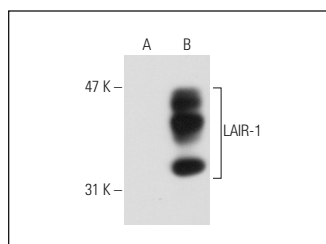
LAIR-1 (NKTA255) is recommended for detection of LAIR-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

Suitable for use as control antibody for LAIR-1 siRNA (h): sc-72118, LAIR-1 shRNA Plasmid (h): sc-72118-SH and LAIR-1 shRNA (h) Lentiviral Particles: sc-72118-V.

Molecular Weight of LAIR-1: 42 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, LAIR-1 (h): 293T Lysate: sc-114216 or HuT 78 whole cell lysate: sc-2208.

## DATA



LAIR-1 (NKTA255): sc-59281. Western blot analysis of LAIR-1 expression in non-transfected: sc-117752 (A) and human LAIR-1 transfected: sc-114216 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Abbonante, V., et al. 2013. Discoidin domain receptor 1 protein is a novel modulator of megakaryocyte-collagen interactions. *J. Biol. Chem.* 288: 16738-16746.
3. Vivanco Gonzalez, N., et al. 2022. An optimized protocol for phenotyping human granulocytes by mass cytometry. *STAR Protoc.* 3: 101280.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.