SANTA CRUZ BIOTECHNOLOGY, INC.

LAIR-1 (lc12): sc-59280

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 hematopoietic 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 cytotoxity. 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., Adema, G., Chang, C., Woollatt, E., Sutherland, G., Lanier, L. and Phillips, J. 1997. LAIR-1, a novel inhibitory receptor expressed on human mononuclear leukocytes. Immunity 7: 283-290.
2. Poggi, A., Pellegatta, F., Leone, B., Moretta, L. and Zocchi, M. 2000. Engagement of the leukocyte-associated Ig-like receptor-1 induces programmed cell death and prevents NFκB nuclear translocation in human myeloid leukemias. Eur. J. Immunol. 30: 2751-2758.
3. Xu, M., Runxiang, Z. and Zhao, A. 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., Chalus, L., Durand, I., Garcia, E., Pin, J., Churakova, T., Patel, S., Zlot, C., Gorman, D., Zurawski, S., Abrams, J., Bates, E. and Garone, P. 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., Johnson, K., Fuller, K., LeRoy, F., Meyaard, L., Sims, M. and Matthews, R. 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 19q13.4.

SOURCE

LAIR-1 (lc12) is a mouse monoclonal antibody raised against amino acids 22-125 of LAIR-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

LAIR-1 (lc12) 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 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10^6 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.

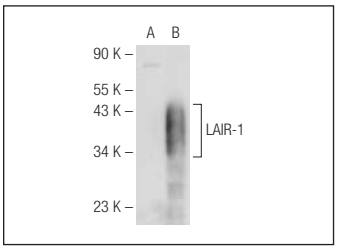
Molecular Weight of LAIR-1: 42 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, LAIR-1 (h2): 293T Lysate: sc-176708 or HuT 78 whole cell lysate: sc-2208.

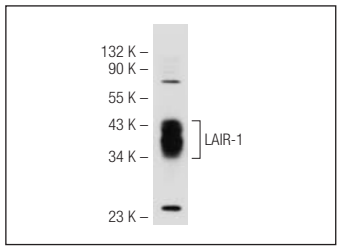
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



LAIR-1 (lc12): sc-59280. Western blot analysis of LAIR-1 expression in non-transfected: sc-117752 (**A**) and human LAIR-1 transfected: sc-176708 (**B**) 293T whole cell lysates.



LAIR-1 (lc12): sc-59280. Western blot analysis of LAIR-1 expression in Jurkat whole cell lysate.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.