

# LAIR-1 (F-5): sc-398141

## 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 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.

## CHROMOSOMAL LOCATION

Genetic locus: LAIR1 (human) mapping to 19q13.42; Lair1 (mouse) mapping to 7 A1.

## SOURCE

LAIR-1 (F-5) is a mouse monoclonal antibody raised against amino acids 182-287 mapping at the C-terminus of LAIR-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LAIR-1 (F-5) is available conjugated to agarose (sc-398141 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398141 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398141 PE), fluorescein (sc-398141 FITC), Alexa Fluor® 488 (sc-398141 AF488), Alexa Fluor® 546 (sc-398141 AF546), Alexa Fluor® 594 (sc-398141 AF594) or Alexa Fluor® 647 (sc-398141 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398141 AF680) or Alexa Fluor® 790 (sc-398141 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## RESEARCH USE

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

## APPLICATIONS

LAIR-1 (F-5) is recommended for detection of LAIR-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for LAIR-1 siRNA (h): sc-72118, LAIR-1 siRNA (m): sc-146638, LAIR-1 shRNA Plasmid (h): sc-72118-SH, LAIR-1 shRNA Plasmid (m): sc-146638-SH, LAIR-1 shRNA (h) Lentiviral Particles: sc-72118-V and LAIR-1 shRNA (m) Lentiviral Particles: sc-146638-V.

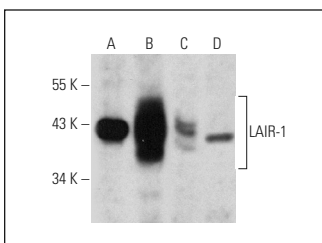
Molecular Weight of LAIR-1: 42 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, K-562 whole cell lysate: sc-2203 or RAW 264.7 whole cell lysate: sc-2211.

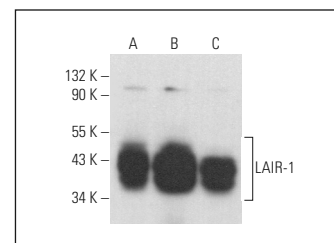
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



LAIR-1 (F-5): sc-398141. Western blot analysis of LAIR-1 expression in K-562 (A), HL-60 (B), RAW 264.7 (C) and RIN-m5F (D) whole cell lysates.



LAIR-1 (F-5): sc-398141. Western blot analysis of LAIR-1 expression in K-562 (A), HEL 92.1.7 (B) and CCRF-CEM (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Guo, Q., et al. 2019. Overexpression of oncostatin M receptor regulates local immune response in glioblastoma. *J. Cell. Physiol.* E-published.
2. Zhang, J., et al. 2020. LAIR-1 overexpression inhibits epithelial-mesenchymal transition in osteosarcoma via GLUT1-related energy metabolism. *World J. Surg. Oncol.* 18: 136.

## STORAGE

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

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA