

Lck (3A5): sc-433

BACKGROUND

Src is the human homolog of the v-Src gene of the Rous sarcoma virus, also known as avian sarcoma virus, or ASV. Src was the first proto-oncogenic, non-receptor tyrosine kinase characterized in human. By virtue of common structural motifs, the Src family is composed of nine members in vertebrates, including Src, Yes, Fgr, Frk, Fyn, Lyn, Hck, Lck and Blk. Src family kinases transduce signals that are involved in the control of a variety of cellular processes, including proliferation, differentiation, motility and adhesion. Src family kinases contain an amino terminal cell membrane anchor, followed by an SH3 domain and an SH2 domain that are involved in modular association and activation, respectively. Src family kinases are normally maintained in an inactive state and can be activated transiently during cellular events such as mitosis. Different subcellular localizations of Src family kinases may be important for the regulation of specific cellular processes, such as mitogenesis, cytoskeletal organization and membrane trafficking. The Fyn and Lck Src family tyrosine kinases play a key role in T cell antigen receptor (TCR) signaling. The human Lck gene maps to chromosome 1p35.1 and encodes a 509 amino acid protein.

REFERENCES

1. Sakaguchi, A.Y. 1983. Genetic organization of human proto-oncogenes. *Prog. Clin. Biol. Res.* 119: 93-103.
2. Williams, J.C., Wierenga, R.K. and Saraste, M. 1998. Insights into Src kinase functions: structural comparisons. *Trends Biochem. Sci.* 23: 179-184.
3. Tatosyan, A.G. and Mizenina, O.A. 2000. Kinases of the Src family: structure and functions. *Biochemistry* 65: 49-58.

CHROMOSOMAL LOCATION

Genetic locus: LCK (human) mapping to 1p35.1; Lck (mouse) mapping to 4 D2.2.

SOURCE

Lck (3A5) is a mouse monoclonal antibody raised against amino acids 1-225 of Lck of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Lck (3A5) is available conjugated to agarose (sc-433 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-433 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-433 PE), fluorescein (sc-433 FITC), Alexa Fluor® 488 (sc-433 AF488), Alexa Fluor® 546 (sc-433 AF546), Alexa Fluor® 594 (sc-433 AF594) or Alexa Fluor® 647 (sc-433 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-433 AF680) or Alexa Fluor® 790 (sc-433 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

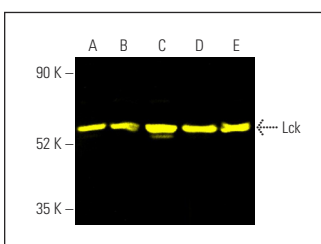
Lck (3A5) is recommended for detection of Lck p56 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

Suitable for use as control antibody for Lck siRNA (h): sc-29392, Lck siRNA (m): sc-35799, Lck shRNA Plasmid (h): sc-29392-SH, Lck shRNA Plasmid (m): sc-35799-SH, Lck shRNA (h) Lentiviral Particles: sc-29392-V and Lck shRNA (m) Lentiviral Particles: sc-35799-V.

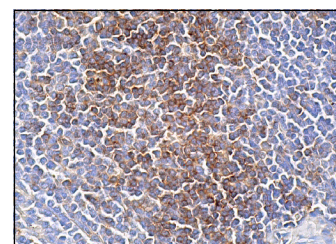
Molecular Weight of Lck: 56 kDa.

Positive Controls: ALL-SIL whole cell lysate: sc-364356, CCRF-CEM cell lysate: sc-2225 or Jurkat whole cell lysate: sc-2204.

DATA



Lck (3A5): sc-433. Fluorescent western blot analysis of Lck expression in MOLT-4 (A), ALL-SIL (B), CCRF-CEM (C), Jurkat (D) and SUP-T1 (E) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_{2b} BP-CFL 488: sc-542745.



ATF-6β (4D10): sc-293306. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear envelope localization.

SELECT PRODUCT CITATIONS

1. Cahir McFarland, E.D. and Thomas, M.L. 1995. CD45 protein-tyrosine phosphatase associates with the WW domain-containing protein, CD45AP, through the transmembrane region. *J. Biol. Chem.* 270: 28103-28107.
2. Chen, E.W., et al. 2019. A dual inhibitor of Cdc7/Cdk9 potently suppresses T cell activation. *Front. Immunol.* 10: 1718.
3. Horkova, V., et al. 2020. Dynamics of the coreceptor-LCK interactions during T cell development shape the self-reactivity of peripheral CD4 and CD8 T cells. *Cell Rep.* 30: 1504-1514.e7.
4. Cho, E.A., et al. 2021. Phosphorylation of RIAM by Src promotes integrin activation by unmasking the PH domain of RIAM. *Structure* 29: 320-329.e4.
5. Lee, M.S., et al. 2022. Enhancing and inhibitory motifs regulate CD4 activity. *Elife* 11: e79508.
6. Horkova, V., et al. 2023. Unique roles of co-receptor-bound LCK in helper and cytotoxic T cells. *Nat. Immunol.* 24: 174-185.

RESEARCH USE

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