SANTA CRUZ BIOTECHNOLOGY, INC.

Syk (6D784): sc-73088

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Src-related protein tyrosine kinases Lck p56 and Fyn p59 are critically involved in T cell antigen receptor (TCR)/CD3-triggered activation. T lymphocytes also express a second class of non-receptor protein tyrosine kinases, Syk p70 and ZAP p72. These kinases resemble the Src family protein tyrosine kinases in that they have a C-terminal catalytic domain, but differ in that they are characterized by two SH2 domains but no SH3 domains. Evidence for the involvement of the Syk/ZAP family proteins in T cell activation was suggested by the finding that Syk p72 kinase fused to the transmembrane and extracellular domains of CD7 and DC16, respectively, can induce complete T cell activation. In contrast, the ZAP p70 kinase was insufficient unless it was co-aggregated with a Fyn p59-containing chimera, suggesting that regulation of ZAP p70 activity may require a functional interaction with Src family kinases.

REFERENCES

1. Amoui, M., et al. 1997. Direct interaction of Syk and Lyn protein tyrosine kinases in rat basophilic leukemia cells activated via type I Fc ε receptors. Eur. J. Immunol. 27: 321-328.
2. Tolar, P., et al. 1997. Protein tyrosine kinase Syk is involved in Thy-1 signaling in rat basophilic leukemia cells. Eur. J. Immunol. 27: 3389-3397.
3. Swann, P.G., et al. 1999. Requirement for a negative charge at threonine 60 of the FcRγ for complete activation of Syk. J. Biol. Chem. 274: 23068-23077.
4. Arudchandran, R., et al. 2000. The Src homology 2 domain of Vav is required for its compartmentation to the plasma membrane and activation of c-Jun NH_2-terminal kinase 1. J. Exp. Med. 191: 47-60.
5. Manetz, T.S., et al. 2001. Vav1 regulates phospholipase Cγ activation and calcium responses in mast cells. Mol. Cell. Biol. 21: 3763-3774.
6. Kovarova, M., et al. 2001. Structure-function analysis of Lyn kinase association with lipid rafts and initiation of early signaling events after Fc ε receptor I aggregation. Mol. Cell. Biol. 21: 8318-8328.

CHROMOSOMAL LOCATION

Genetic locus: SYK (human) mapping to 9q22.2; Syk (mouse) mapping to 13 A5.

SOURCE

Syk (6D784) is a mouse monoclonal antibody raised against amino acids 5-360 of Syk 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.

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.

APPLICATIONS

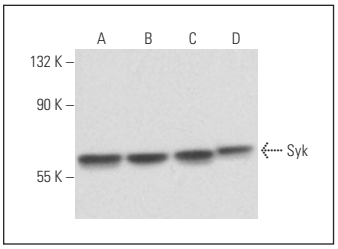
Syk (6D784) is recommended for detection of Syk of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100–500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Syk siRNA (h): sc-29501, Syk siRNA (m2): sc-44328, Syk shRNA Plasmid (h): sc-29501-SH, Syk shRNA Plasmid (m2): sc-44328-SH, Syk shRNA (h) Lentiviral Particles: sc-29501-V and Syk shRNA (m2) Lentiviral Particles: sc-44328-V.

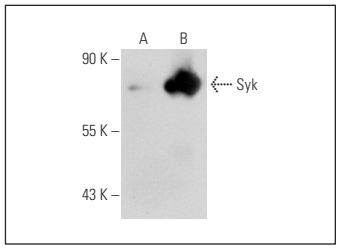
Molecular Weight of Syk: 72 kDa.

Positive Controls: Syk (h): 293 Lysate: sc-111124, BJAB whole cell lysate: sc-2207 or NAMALWA cell lysate: sc-2234.

DATA



Syk (6D784): sc-73088. Western blot analysis of Syk expression in BJAB (**A**), Raji (**B**), NAMALWA (**C**) and Ramos (**D**) whole cell lysates.



Syk (6D784): sc-73088. Western blot analysis of Syk expression in non-transfected: sc-110760 (**A**) and human Syk transfected: sc-111124 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Liu, J., et al. 2013. Regulation of VH replacement by B cell receptor-mediated signaling in human immature B cells. J. immunol. 190: 5559-5566.

PROTOCOLS

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

CONJUGATES

See **Syk (4D10): sc-1240** for Syk antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.