

Syk (6A464): sc-73089

BACKGROUND

Syk (spleen tyrosine kinase) is a 635 amino acid protein that contains one protein kinase domain and two SH2 domains. One of several members of the protein kinase superfamily, Syk functions as a positive effector of B cell antigen receptor (CD79)-stimulated responses, coupling CD79 with the movement of one calcium ion through one of two phospho-regulated pathways. Specifically, calcium ions travel through either a phosphoinositide 3-kinase (PI 3-kinase)-dependent pathway when Syk is not phosphorylated, or through a phospholipase C (PLC) γ -dependent pathway when human Syk is phosphorylated on Tyr 348 and Tyr 352. Via its ability to influence CD79 activity and to control the movement of calcium through the cell, Syk plays an important role in a variety of cellular responses, including differentiation, phagocytosis, proliferation and B cell development. Syk expression is upregulated in T cell lymphoma, suggesting a possible role for Syk in tumorigenesis. Two isoforms of Syk, designated short and long, exist due to alternative splicing events.

REFERENCES

1. Hutchcroft, J.E., et al. 1992. Association of the 72 kDa protein-tyrosine kinase PTK72 with the B cell antigen receptor. *J. Biol. Chem.* 267: 8613-8619.
2. Rowley, R.B., et al. 1995. Syk protein-tyrosine kinase is regulated by tyrosine-phosphorylated Ig α /Ig β immunoreceptor tyrosine activation motif binding and autophosphorylation. *J. Biol. Chem.* 270: 11590-11594.
3. Wossning, T., et al. 2006. Deregulated Syk inhibits differentiation and induces growth factor-independent proliferation of pre-B cells. *J. Exp. Med.* 203: 2829-2840.
4. Wang, X., et al. 2006. Syk is downstream of intercellular adhesion molecule-1 and mediates human rhinovirus activation of p38 MAPK in airway epithelial cells. *J. Immunol.* 177: 6859-6870.
5. Röck, J., et al. 2007. CD303 (BDCA-2) signals in plasmacytoid dendritic cells via a BCR-like signalosome involving Syk, Slp65 and PLC γ 2. *Eur. J. Immunol.* 37: 3564-3575.
6. Chaudhary, A., et al. 2007. Tyrosine kinase Syk associates with Toll-like receptor 4 and regulates signaling in human monocytic cells. *Immunol. Cell Biol.* 85: 249-256.

CHROMOSOMAL LOCATION

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

SOURCE

Syk (6A464) is a mouse monoclonal antibody raised against amino acids 5-360 of Syk of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

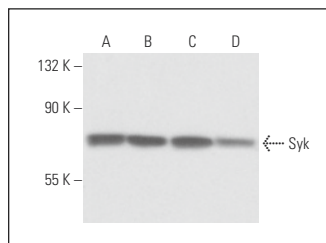
Syk (6A464) is recommended for detection of Syk of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 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.

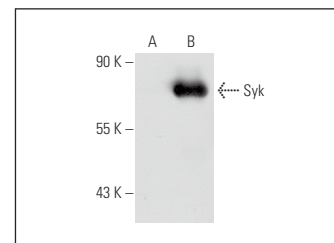
Molecular Weight of Syk: 72 kDa.

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

DATA



Syk (6A464): sc-73089. Western blot analysis of Syk expression in BJAB (A), Raji (B), NAMALWA (C) and Ramos (D) whole cell lysates.



Syk (6A464): sc-73089. 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. Mouguelar, V.S. and Coux, G. 2014. Activation of spleen tyrosine kinase (Syk) at fertilization in *Rhinella arenarum* eggs. *Int. J. Dev. Biol.* 58: 811-818.
2. Caruso, J.A., et al. 2017. Mercury alters endogenous phosphorylation profiles of Syk in murine B cells. *BMC Immunol.* 18: 37.

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 for detailed protocols and support products.



See **Syk (4D10): sc-1240** for Syk antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.