

Syk (h2): 293 Lysate: sc-159001

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.
7. Bijli, K.M., et al. 2008. Activation of Syk by protein kinase C- δ regulates thrombin-induced intercellular adhesion molecule-1 expression in endothelial cells via tyrosine phosphorylation of RelA/p65. *J. Biol. Chem.* 283: 14674-14684.
8. Inubushi, S., et al. 2008. Hepatitis C virus NS5A protein interacts with and negatively regulates the non-receptor protein tyrosine kinase Syk. *J. Gen. Virol.* 89: 1231-1242.
9. Feldman, A.L., et al. 2008. Overexpression of Syk tyrosine kinase in peripheral T-cell lymphomas. *Leukemia* 22: 1139-1143.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: SYK (human) mapping to 9q22.2.

PRODUCT

Syk (h2): 293 Lysate represents a lysate of human Syk transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

Syk (h2): 293 Lysate is suitable as a Western Blotting positive control for human reactive Syk antibodies. Recommended use: 10-20 μ l per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

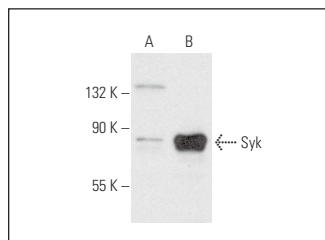
Syk (G-2): sc-28337 is recommended as a positive control antibody for Western Blot analysis of enhanced human Syk expression in Syk transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

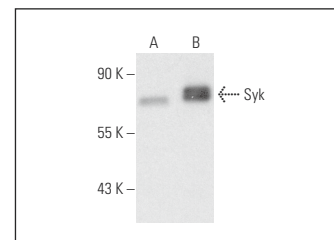
To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



Syk (G-2): sc-28337. Western blot analysis of Syk expression in non-transfected: sc-110760 (A) and human Syk transfected: sc-159001 (B) 293 whole cell lysates.



Syk (SYK-01): sc-51703. Western blot analysis of Syk expression in non-transfected: sc-110760 (A) and human Syk transfected: sc-159001 (B) 293 whole cell lysates.

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.