

p-Syk (Tyr 323): sc-293118

BACKGROUND

Syk (spleen tyrosine kinase) is a 635 amino acid protein that contains one protein kinase domain and 2 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 is phosphorylated by Lyn on Tyr 323, creating a binding site for Cbl.

REFERENCES

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

SOURCE

p-Syk (Tyr 323) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 323 phosphorylated Syk of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml 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.

APPLICATIONS

p-Syk (Tyr 323) is recommended for detection of Tyr 323 phosphorylated Syk of 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

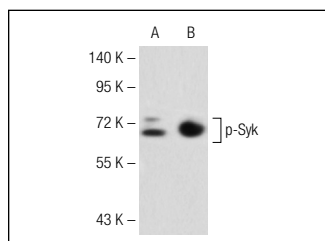
Suitable for use as control antibody for Syk siRNA (h): sc-29501, Syk shRNA Plasmid (h): sc-29501-SH and Syk shRNA (h) Lentiviral Particles: sc-29501-V.

Molecular Weight of p-Syk: 72 kDa.

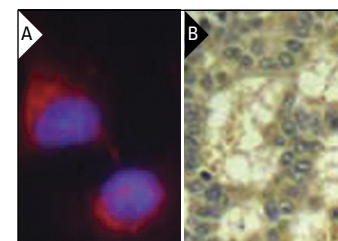
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-Syk (Tyr 323): sc-293118. Western blot analysis of Syk phosphorylation expression in 3 minute H₂O₂ treated (A) and 15 minute H₂O₂ treated (B) JK cell extracts.



p-Syk (Tyr 323): sc-293118. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

- Municio, C., et al. 2013. The response of human macrophages to β -glucans depends on the inflammatory milieu. *PLoS ONE* 8: e62016.
- Callaway, J.B., et al. 2015. Spleen tyrosine kinase (Syk) mediates IL-1 β induction by primary human monocytes during antibody-enhanced dengue virus infection. *J. Biol. Chem.* 290: 17306-17320.

RESEARCH USE

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