

Syk (G-2): sc-28337

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

- 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.

CHROMOSOMAL LOCATION

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

SOURCE

Syk (G-2) is a mouse monoclonal antibody raised against amino acids 257-352 of Syk of human origin.

PRODUCT

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

APPLICATIONS

Syk (G-2) is recommended for detection of Syk of human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

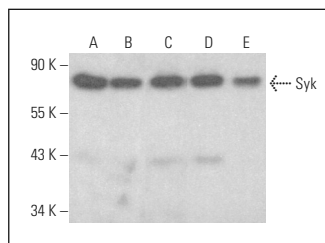
Molecular Weight of Syk: 72 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, HL-60 whole cell lysate: sc-2209 or Ramos cell lysate: sc-2216.

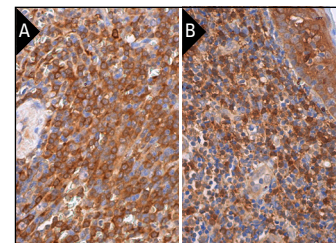
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Syk (G-2): sc-28337. Western blot analysis of Syk expression in BJAB (A), HL-60 (B), Ramos (C), Raji (D) and A-431 (E) whole cell lysates.



Syk (G-2): sc-28337. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and membrane staining of cells in white pulp and cells in red pulp (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic and nuclear staining of cells in non-germinal center and squamous epithelial cells (B).

SELECT PRODUCT CITATIONS


- Fong, K.P., et al. 2016. Directly activating the Integrin α IIb β 3 initiates outside-in signaling by causing α IIb β 3 clustering. *J. Biol. Chem.* 291: 11706-11716.
- Pantaleo, A., et al. 2016. Band 3 erythrocyte membrane protein acts as redox stress sensor leading to its phosphorylation by p72 Syk. *Oxid. Med. Cell. Longev.* 2016: 6051093.
- Vásquez, A., et al. 2019. Altered recruitment of Lyn, Syk and ZAP-70 into lipid rafts of activated B cells in systemic lupus erythematosus. *Cell. Signal.* 58: 9-19.

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.



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