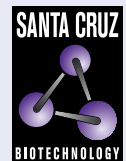


# Syk (D-3): sc-166226



The Power to Question

## 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)  $\gamma$ -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  $\alpha$ /Ig  $\beta$  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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Syk (D-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 11-41 at the N-terminus of Syk of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Syk (D-3) is available conjugated to agarose (sc-166226 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166226 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166226 PE), fluorescein (sc-166226 FITC), Alexa Fluor® 488 (sc-166226 AF488), Alexa Fluor® 546 (sc-166226 AF546), Alexa Fluor® 594 (sc-166226 AF594) or Alexa Fluor® 647 (sc-166226 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166226 AF680) or Alexa Fluor® 790 (sc-166226 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166226 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

Syk (D-3) is recommended for detection of Syk of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

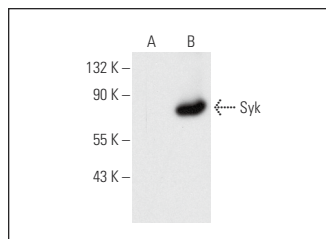
Syk (D-3) is also recommended for detection of Syk in additional species, including equine, canine and bovine.

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.

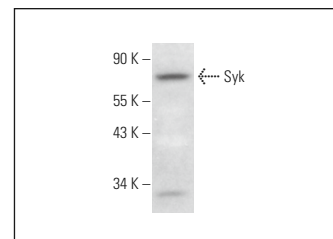
Molecular Weight of Syk: 72 kDa.

Positive Controls: Syk (h): 293 Lysate: sc-111124, A-431 whole cell lysate: sc-2201 or THP-1 cell lysate: sc-2238.

## DATA



Syk (D-3): sc-166226. Western blot analysis of Syk expression in non-transfected: sc-110760 (A) and human Syk transfected: sc-111124 (B) 293 whole cell lysates.



Syk (D-3): sc-166226. Western blot analysis of Syk expression in THP-1 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Jiang, X., et al. 2019. Interplay between HGAL and Grb2 proteins regulates B-cell receptor signaling. *Blood Adv.* 3: 2286-2297.
2. Liu, Y., et al. 2019. Nonmuscle myosin heavy chain IIA recognizes sialic acids on sialylated RNA viruses to suppress proinflammatory responses via the DAP12-Syk pathway. *MBio* 10: e00574-19.
3. Yang, F., et al. 2022. A novel TLR4-SYK interaction axis plays an essential role in the innate immunity response in bovine mammary epithelial cells. *Biomedicine* 11: 97.

## 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.