SANTA CRUZ BIOTECHNOLOGY, INC.

Sab (PL-A23): sc-135617

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Sab is a Src homology 3 domain (SH3) binding protein that preferentially associates with Bruton's tyrosine kinase, Btk, over other related tyrosine kinases. Btk, together with Itk, Tec, Txk and Bmx, is a member of a family of cytoplasmic tyrosine kinases (the Btk/Tec family). Btk is a B cell specific kinase that is crucial for human and murine B cell development, and its deficiency causes human X-linked agammaglobulinemia and murine X-linked immunodeficiency. Sab serves as a negative regulator of Btk kinase activity and Sab binding to Btk reduces the phosphorylation of Btk substrates and also inhibits Btk-induced auto-phosphorylation in B cells. The SH3 domain of Sab directly binds to the SH3 domain of Btk and this interaction is essential for the regulatory activity of Sab. Sab is more broadly expressed than Btk, suggesting that Sab may target additional protein kinases that are specific to various tissues.

REFERENCES

1. Wahl, M.I., et al. 1997. Phosphorylation of two regulatory tyrosine residues in the activation of Bruton's tyrosine kinase via alternative receptors. Proc. Natl. Acad. Sci. USA 94: 11526-11533.
2. Matsushita, M., et al. 1998. Identification and characterization of a novel SH3-domain binding protein, Sab, which preferentially associates with Bruton's tyrosine kinase (BtK). Biochem. Biophys. Res. Commun. 245: 337-343.
3. Satterthwaite, A.B., et al. 1998. Btk function in B-cell development and response. Semin. Immunol. 10: 309-316.
4. Yamadori, T., et al. 1999. Bruton's tyrosine kinase activity is negatively regulated by Sab, the Btk-SH3 domain-binding protein. Proc. Natl. Acad. Sci. USA 96: 6341-6346.
5. Kawakami, Y., et al. 1999. Functions of Bruton's tyrosine kinase in mast and B-cells. J. Leukoc. Biol. 65: 286-290.
6. Morrogh, L.M., et al. 1999. The SH3 domain of Bruton's tyrosine kinase displays altered ligand binding properties when auto-phosphorylated *in vitro*. Eur. J. Immunol. 29: 2269-2279.

CHROMOSOMAL LOCATION

Genetic locus: SH3BP5 (human) mapping to 3p25.1; Sh3bp5 (mouse) mapping to 14 B.

SOURCE

Sab (PL-A23) is a mouse monoclonal antibody raised against recombinant Sab protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain 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

Sab (PL-A23) is recommended for detection of Sab of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 Sab siRNA (h): sc-106528, Sab siRNA (m): sc-153196, Sab shRNA Plasmid (h): sc-106528-SH, Sab shRNA Plasmid (m): sc-153196-SH, Sab shRNA (h) Lentiviral Particles: sc-106528-V and Sab shRNA (m) Lentiviral Particles: sc-153196-V.

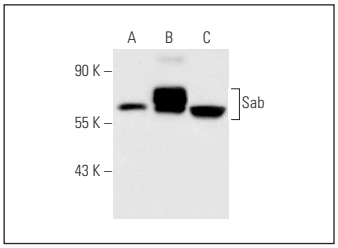
Molecular Weight of Sab: 70 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, A-431 whole cell lysate: sc-2201 or Sab (h2): 293T Lysate: sc-171068.

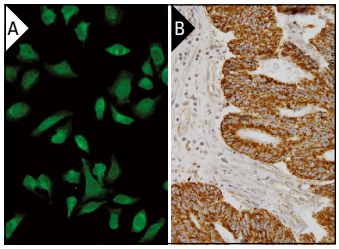
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Sab (PL-A23): sc-135617. Western blot analysis of Sab expression in non-transfected 293T: sc-117752 (**A**), human Sab transfected 293T: sc-171068 (**B**) and Raji (**C**) whole cell lysates.



Sab (PL-A23): sc-135617. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon adenocarcinoma tissue showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Hashimoto, Y., et al. 2021. Restoration of the reduced CLSP activity alleviates memory impairment in Alzheimer disease. Transl. Psychiatry 11: 44.

RESEARCH USE

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