

SH2-B $\alpha/\beta/\gamma/\delta$ (46): sc-136065

BACKGROUND

SH2-B, also known as SH2B1 or PSM, is a 756 amino acid protein that is a component of the signaling network and is involved in the regulation of cell shape and movement. SH2-B is related to the APS (adapter molecule containing PH and SH2 domains) family of adapter proteins, which characteristically contain a pleckstrin homology (PH) domain, an SH2 domain and a tyrosine phosphorylation site. SH2-B is alternatively spliced to generate three distinct isoforms, SH2-B α , β , and γ , that share an identical N-terminal sequence, including the PH domain, the SH2 domain, and multiple proline-rich motifs. Containing a PH domain and a SH2 domain, SH2-B shuttles between the nucleus and the cytoplasm. SH2-B is widely expressed with highest expression in skeletal muscle and ovary. SH2-B is phosphorylated on tyrosine residues in response to receptor kinase stimulation.

REFERENCES

1. Frank, S.J., et al. 1995. Regions of the JAK2 tyrosine kinase required for coupling to the growth hormone receptor. *J. Biol. Chem.* 270: 14776-14785.
2. Rui, L., et al. 1997. Identification of SH2-B β as a substrate of the tyrosine kinase JAK2 involved in growth hormone signaling. *Mol. Cell. Biol.* 17: 6633-6644.
3. Rui, L., et al. 1998. Platelet-derived growth factor (PDGF) stimulates the association of SH2-B β with PDGF receptor and phosphorylation of SH2-B β . *J. Biol. Chem.* 273: 21239-21245.
4. Rui, L., et al. 1999. Identification of SH2-B β as a potent cytoplasmic activator of the tyrosine kinase Janus kinase 2. *Proc. Natl. Acad. Sci. USA* 96: 7172-7177.
5. Rui, L., et al. 1999. SH2-B is required for nerve growth factor-induced neuronal differentiation. *J. Biol. Chem.* 274: 10590-10594.
6. Rui, L., et al. 1999. SH2-B, a membrane-associated adapter, is phosphorylated on multiple serines/threonines in response to nerve growth factor by kinases within the MEK/ERK cascade. *J. Biol. Chem.* 274: 26485-26492.
7. Ahmed, Z., et al. 1999. APS, an adapter protein with a PH and SH2 domain, is a substrate for the Insulin receptor kinase. *Biochem. J.* 341: 665-668.
8. Rui, L., et al. 2000. Differential binding to and regulation of JAK2 by the SH2 domain and N-terminal region of SH2-B β . *Mol. Cell. Biol.* 20: 3168-3177.

CHROMOSOMAL LOCATION

Genetic locus: SH2B1 (human) mapping to 16p11.2; Sh2b1 (mouse) mapping to 7 F3.

SOURCE

SH2-B $\alpha/\beta/\gamma/\delta$ (46) is a mouse monoclonal antibody raised against amino acids 403-513 of SH2-B β of rat origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

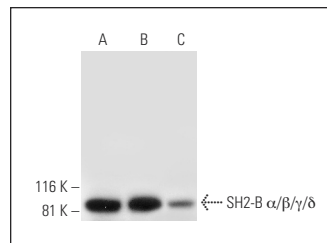
SH2-B $\alpha/\beta/\gamma/\delta$ (46) is recommended for detection of SH2-B α , β , γ , and δ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for SH2-B siRNA (h): sc-44095, SH2-B siRNA (m): sc-40333, SH2-B shRNA Plasmid (h): sc-44095-SH, SH2-B shRNA Plasmid (m): sc-40333-SH, SH2-B shRNA (h) Lentiviral Particles: sc-44095-V and SH2-B shRNA (m) Lentiviral Particles: sc-40333-V.

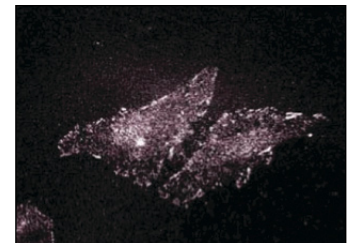
Molecular Weight of SH2-B $\alpha/\beta/\gamma/\delta$ isoforms: 70-95 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287, ES-2 cell lysate: sc-24674 or OV-90 whole cell lysate: sc-364191.

DATA



SH2-B $\alpha/\beta/\gamma/\delta$ (46): sc-136065. Western blot analysis of SH2-B $\alpha/\beta/\gamma/\delta$ expression in SJRH30 (A), ES-2 (B) and OV-90 (C) whole cell lysates.



SH2-B $\alpha/\beta/\gamma/\delta$ (46): sc-136065. Immunofluorescence staining of HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Yuan, J., et al. 2018. SH2B1 protects against OGD/R-induced apoptosis in PC12 cells via activation of the JAK2/Stat3 signaling pathway. *Mol. Med. Rep.* 18: 2613-2620.
2. Flores, A., et al. 2019. Crucial role of the SH2B1 PH domain for the control of energy balance. *Diabetes* 68: 2049-2062.
3. Xin, G., et al. 2020. SH2B1 protects cardiomyocytes from ischemia/reperfusion injury via the activation of the PI3K/Akt pathway. *Int. Immunopharmacol.* 83: 105910.
4. Cote, J.L., et al. 2021. Deletion of the brain-specific α and δ isoforms of adapter protein SH2B1 protects mice from obesity. *Diabetes* 70: 400-414.
5. Cote, J.L., et al. 2022. The nucleolar δ isoform of adapter protein SH2B1 enhances morphological complexity and function of cultured neurons. *J. Cell Sci.* 135: jcs259179.

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. Not for resale.