SANTA CRUZ BIOTECHNOLOGY, INC.

p-Caldesmon (Tyr 27)-R: sc-12930-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

S3-v-Erb B is a retroviral oncogene that encodes a ligand-independent, transforming mutant of the epidermal growth factor receptor. Expression of S3-v-Erb B in primary fibroblasts results in the tyrosine phosphorylation of Caldesmon. Caldesmon is an Actin- and calmodulin-binding protein; the phosphorylated form of Caldesmon is associated with a signaling Shc/GRB2 complex. Tyrosine 27, which is located within the Myosin binding domain of Caldesmon, is one of the major sites of phosphorylation. Tyrosine phosphorylation of Caldesmon enhances its binding to the Shc/GRB2 complex. Acetylcholine increases phosphorylation of Caldesmon at Serine 789, and extracellular signal-regulated kinases (ERKs) phosphorylate Caldesmon at Serine 789 during smooth muscle stimulation, indicating that Caldesmon is a putative downstream target of MAP kinase pathways.

REFERENCES

1. McManus, M.J., Lingle, W.L., Salisbury, J.L. and Maihle, N.J. 1997. A transformation-associated complex involving tyrosine kinase signal adapter proteins and Caldesmon links v-Erb B signaling to Actin stress fiber disassembly. Proc. Natl. Acad. Sci. USA 94: 11351-11356.
2. D'Angelo, G., Graceffa, P., Wang, C.A., Wrangle, J. and Adam, L.P. 1999. Mammal-specific, ERK-dependent, Caldesmon phosphorylation in smooth muscle. Quantitation using novel anti-phosphopeptide antibodies. J. Biol. Chem. 274: 30115-30121.
3. Wang, Z., Danielsen, A.J., Maihle, N.J. and McManus, M.J. 1999. Tyrosine phosphorylation of Caldesmon is required for binding to the Shc/GRB2 complex. J. Biol. Chem. 274: 33807-33813.
4. Cook, A.K., Carty, M., Singer, C.A., Yamboliev, I.A. and Gerthoffer, W.T. 2000. Coupling of M2 muscarinic receptors to ERK MAP kinases and Caldesmon phosphorylation in colonic smooth muscle. Am. J. Physiol. Gastrointest. Liver Physiol. 278: 429-437.
5. Li, Y., Zhuang, S., Guo, H., Mabuchi, K., Lu, R.C. and Wang, C.A. 2000. The major Myosin-binding site of Caldesmon resides near its N-terminal extreme. J. Biol. Chem. 275: 10989-10994.

CHROMOSOMAL LOCATION

Genetic locus: CALD1 (human) mapping to 7q33; Cald1 (mouse) mapping to 6 B1.

SOURCE

p-Caldesmon (Tyr 27)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Tyr 27 of Caldesmon of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12930 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Caldesmon (Tyr 27)-R is recommended for detection of Tyr 27 phosphorylated H-Caldesmon and correspondingly phosphorylated L-Caldesmon 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-Caldesmon (Tyr 27)-R is also recommended for detection of correspondingly phosphorylated Tyr on Caldesmon in additional species, including canine and bovine.

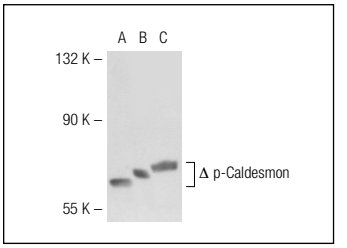
Suitable for use as control antibody for Caldesmon siRNA (h): sc-29880, Caldesmon siRNA (m): sc-29881, Caldesmon shRNA Plasmid (h): sc-29880-SH, Caldesmon shRNA Plasmid (m): sc-29881-SH, Caldesmon shRNA (h) Lentiviral Particles: sc-29880-V and Caldesmon shRNA (m) Lentiviral Particles: sc-29881-V.

Molecular Weight of p-H-Caldesmon: 90-150 kDa.

Molecular Weight of p-L-Caldesmon: 60-80 kDa.

Positive Controls: Caldesmon (m): 293T Lysate: sc-118955 or NIH/3T3 whole cell lysate: sc-2210.

DATA



p-Caldesmon (Tyr 27): sc-12930. Western blot analysis of phosphorylated L-Caldesmon in non-transfected 293T: sc-117752 (**A**), truncated mouse Caldesmon transfected 293T: sc-118955 (**B**) and NIH/3T3 (**C**) whole cell lysates.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.