

p-Caldesmon (Ser 789): sc-12931

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

- 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.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-Caldesmon (Ser 789) is available as either goat (sc-12931) or rabbit (sc-12931-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Ser 789 of H-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-12931-R P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

p-Caldesmon (Ser 789) is recommended for detection of Ser 789 phosphorylated H-Caldesmon and correspondingly phosphorylated L-Caldesmon I and II 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).

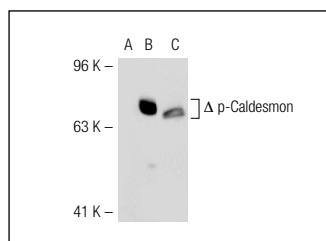
p-Caldesmon (Ser 789)-R is also recommended for detection of correspondingly phosphorylated Ser on H-Caldesmon, L-Caldesmon I and II in additional species, including equine, canine, bovine and porcine.

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

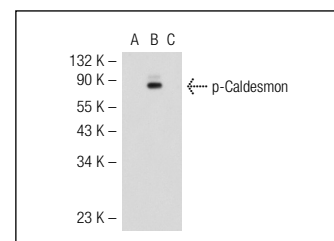
Molecular Weight of p-L-Caldesmon: 60-80 kDa.

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

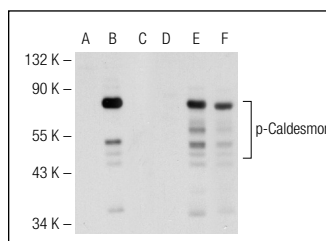
DATA



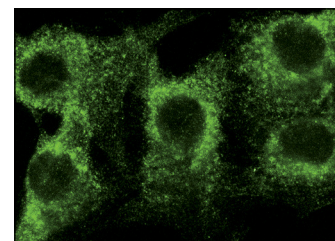
p-Caldesmon (Ser 789)-R: sc-12931-R. Western blot analysis of L-Caldesmon phosphorylation in non-transfected 293T: sc-117752 (A), mouse Caldesmon truncated transfected 293T: sc-118955 (B) and NIH/3T3 (C) whole cell lysates.



p-Caldesmon (Ser 789)-R: sc-12931-R. Western blot analysis of Caldesmon phosphorylation in non-transfected: sc-117752 (A), untreated mouse Caldesmon transfected: sc-118955 (B) and lambda protein phosphatase (sc-200312A) treated mouse Caldesmon transfected: sc-118955 (C) 293T whole cell lysates.



Western blot analysis of Caldesmon phosphorylation in non-transfected: sc-117752 (A, D), untreated mouse Caldesmon transfected: sc-118955 (B, E) and lambda protein phosphatase (sc-200312A) treated mouse Caldesmon transfected: sc-118955 (C, F) 293T whole cell lysates. Anti-bodies tested include p-Caldesmon (Ser 789)-R: sc-12931-R (A, B, C) and Caldesmon (H-300): sc-15374 (D, E, F).



p-Caldesmon (Ser 789)-R: sc-12931-R. Immunofluorescence staining of methanol-fixed BC₃H1 cells showing cytoskeletal localization.

SELECT PRODUCT CITATIONS

- Daily, A., et al. 2010. Abrogation of microcystin cytotoxicity by MAP kinase inhibitors and N-acetyl cysteine is confounded by OATPIB1 uptake activity inhibition. *Toxicol* 55: 827-837.