SANTA CRUZ BIOTECHNOLOGY, INC.

tuberin (E-9): sc-365103

BACKGROUND

Tuberous sclerosis (TSC) is a human genetic disorder characterized by mental retardation and the widespread development of benign and infrequently malignant tumors in a variety of tissues. Two different genetic loci have been linked to TSC; one of these loci, the tuberous sclerosis-2 gene (TSC2), encodes a protein 1,784 amino acids in length, called tuberin. Tuberin exhibits a region of limited homology to the catalytic domain of Rap1 GAP. Subcellular fractionation studies have shown tuberin to be predominantly localized in membrane fractions. Tuberin is capable of stimulating the intrinsic GTPase activity of Rap 1A, but not Rap 2, H-Ras, Rac or Rho. TSC2 maps to human chromosome 16 and is associated with several intragenic mutations in affected patients. The mouse homolog of the tuberin gene maps to chromosome 17.

REFERENCES

1. Pizon, V., et al. 1988. Nucleotide sequence of a human cDNA encoding a Ras-related protein (Rap 1B). Nucleic Acids Res. 16: 7719.
2. Pizon, V., et al. 1988. Human cDNAs Rap 1 and Rap 2 homologous to the *Drosophilia* gene Dras3 encode proteins closely related to Ras in the "effector" region. Oncogene 3: 201-204.
3. Frech, M., et al. 1990. Inhibition of GTPase activating protein stimulation of Ras-p21 GTPase by the Krev-1 gene product. Science 249: 169-171.
4. The European chromosome 16 tuberous sclerosis consortium. 1993. Identification and characterization of the tuberous sclerosis gene on chromosome 16. Cell 75: 1305-1315.
5. Boguski, M.S., et al. 1993. Proteins regulating Ras and its relatives. Nature 366: 643-653.
6. Wienecke, R., et al. 1995. Identification of tuberin, the tuberous sclerosis-2 product. Tuberin posesses specific Rap 1GAP activity. J. Biol. Chem. 270: 16409-16414.
7. Olsson, P.G., et al. 1995. The mouse homolog of the tuberin gene (TSC2) maps to a conserved synteny group between mouse chromosome 17 and human 16p13.3. Genomics 25: 339-340.

CHROMOSOMAL LOCATION

Genetic locus: TSC2 (human) mapping to 16p13.3; Tsc2 (mouse) mapping to 17 A3.3.

SOURCE

tuberin (E-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of tuberin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365103 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

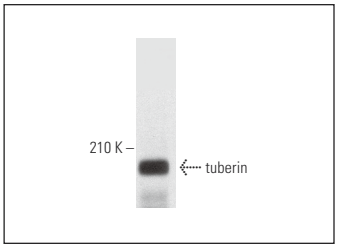
tuberin (E-9) is recommended for detection of tuberin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for tuberin siRNA (h): sc-36762, tuberin siRNA (m): sc-36763, tuberin shRNA Plasmid (h): sc-36762-SH, tuberin shRNA Plasmid (m): sc-36763-SH, tuberin shRNA (h) Lentiviral Particles: sc-36762-V and tuberin shRNA (m) Lentiviral Particles: sc-36763-V.

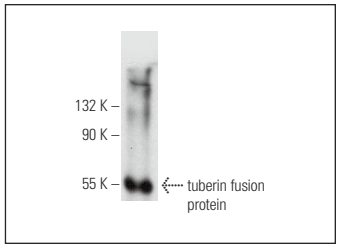
Molecular Weight of tuberin: 200 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, U-87 MG cell lysate: sc-2411 or MCF7 whole cell lysate: sc-2206.

DATA



tuberin (E-9): sc-365103. Western blot analysis of tuberin expression in MCF7 whole cell lysate.



tuberin (E-9): sc-365103. Western blot analysis of human recombinant tuberin fusion protein.

SELECT PRODUCT CITATIONS

1. Kisacam, M.A., et al. 2022. Calcium fructoborate regulate colon cancer (Caco-2) cytotoxicity through modulation of apoptosis. J. Biochem. Mol. Toxicol. 36: e23021.
2. Kisacam, M.A., et al. 2023. Nobiletin is capable of regulating certain anti-cancer pathways in a colon cancer cell line. Naunyn Schmiedebergs Arch. Pharmacol. 396: 547-555.

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.