

tuberin (N-19): sc-892

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 1784 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.

CHROMOSOMAL LOCATION

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

SOURCE

tuberin (N-19) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of tuberin 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-892 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

tuberin (N-19) is recommended for detection of tuberin 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).

tuberin (N-19) is also recommended for detection of tuberin in additional species, including equine, canine, porcine and avian.

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: U-87 MG cell lysate: sc-2411, U-87 MG cell lysate: sc-2411 or PC-3 cell lysate: sc-2220.

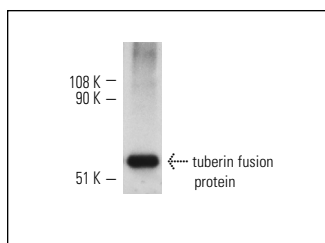
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

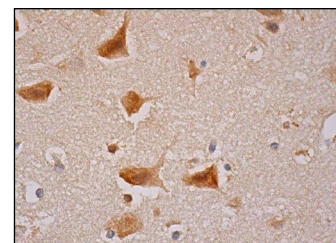
RESEARCH USE

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

DATA



tuberin (N-19): sc-892. Western blot analysis of human recombinant tuberin fusion protein.



tuberin (N-19): sc-892. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic and nuclear staining of neuronal cells and glial cells.

SELECT PRODUCT CITATIONS

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3. Zhang, H., et al. 2003. Loss of Tsc1/Tsc2 activates mTOR and disrupts PI3K-Akt signaling through downregulation of PDGFR. *J. Clin. Invest.* 112: 1223-1233.
4. Birchenall-Roberts, M.C., et al. 2004. Tuberous sclerosis complex 2 gene product interacts with human SMAD proteins. A molecular link of two tumor suppressor pathways. *J. Biol. Chem.* 279: 25605-25613.
5. Ma, L., et al. 2005. Phosphorylation and functional inactivation of TSC2 by Erk: implications for tuberous sclerosis and cancer pathogenesis. *Cell* 121: 179-193.
6. Manning, B.D., et al. 2005. Feedback inhibition of Akt signaling limits the growth of tumors lacking Tsc2. *Genes Dev.* 19: 1773-1778.
7. Cao, Y., et al. 2006. Interaction of FOXO1 and TSC2 induces insulin resistance through activation of the mammalian target of rapamycin/p70 S6K pathway. *J. Biol. Chem.* 281: 40242-40251.
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9. Nie, D., et al. 2010. Tsc2-Rheb signaling regulates EphA-mediated axon guidance. *Nat. Neurosci.* 13: 163-172.



Try **tuberin (B-5): sc-271314** or **tuberin (E-9): sc-365103**, our highly recommended monoclonal alternatives to tuberin (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **tuberin (B-5): sc-271314**.