

p-tuberin (Thr 1462): sc-32839

BACKGROUND

Hamartin (TSC1) and tuberin (TSC2, LAM, TSC4) can form a functional complex and negatively regulate cell growth by inhibiting protein synthesis. Tuberous sclerosis complex (TSC) is a genetic disorder that arises through mutations in the hamartin and tuberin genes. The phosphoinositide 3-kinase (PI 3-K)/Akt pathway phosphorylates tuberin on Serine 939 and Threonine 1462, and inhibits the tumor suppressor function of the TSC complex. Anisomycin stimulates phosphorylation of Serine 1210 of tuberin via the p38-MK2 kinase cascade. Phosphorylation of tuberin by MK2 creates a 14-3-3 binding site. Phosphorylation of hamartin regulates the function of the hamartin-tuberin complex during the G₂/M phase of the cell cycle.

REFERENCES

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- Lu, Z., et al. 2004. Human papillomavirus 16 E6 oncoprotein interferences with Insulin signaling pathway by binding to tuberin. *J. Biol. Chem.* 279: 35664-35670.
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- Govindarajan, B., et al. 2005. Transgenic expression of dominant negative tuberin through a strong constitutive promoter results in a tissue-specific tuberous sclerosis phenotype in the skin and brain. *J. Biol. Chem.* 280: 5870-5874.

CHROMOSOMAL LOCATION

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

STORAGE

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

SOURCE

p-tuberin (Thr 1462) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 1462 phosphorylated tuberin of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-32839 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-tuberin (Thr 1462) is recommended for detection of Thr 1462 phosphorylated tuberin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-tuberin (Thr 1462) is also recommended for detection of correspondingly phosphorylated tuberin in additional species, including equine, canine and porcine.

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 p-tuberin: 200 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Chen, L., et al. 2011. Cadmium induction of reactive oxygen species activates the mTOR pathway, leading to neuronal cell death. *Free Radic. Biol. Med.* 50: 624-632.

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.