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Store at -20C
#4963

Hamartin/TSC1 (1B2) Mouse mAb

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W	Reactivity: H M R	Sensitivity: Endogenous	MW (kDa): 150 to 170	Source/Isotype: Mouse IgG1	UniProt ID: #Q92574	Entrez-Gene Id: 7248
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Product Usage Information

Application

Western Blotting

Dilution

1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Hamartin/TSC1 (1B2) Mouse mAb detects endogenous levels of total hamartin protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a recombinant protein from the central region of human hamartin.

Background

Tuberous sclerosis complex (TSC) is an autosomal dominant disorder that causes symptoms including hamartomas in brain, kidney, heart, lung and skin (1). The tumor suppressor genes TSC1 and TSC2 encode hamartin and tuberlin, respectively (2,3). Hamartin and tuberlin form a functional complex and are involved in numerous cellular activities such as vesicular trafficking, regulation of the G1 phase of the cell cycle, steroid hormone regulation, Rho activation and anchoring neuronal intermediate filaments to the actin cytoskeleton (4-9). The combination of genetic, biochemical and cell-biological studies demonstrate that the tuberlin/hamartin complex functions as a GTPase-activating protein for the Ras-related small G protein Rheb and thus inhibits targets of rapamycin including mTOR. Cells lacking hamartin or tuberlin fail to inhibit phosphorylation of S6 kinase resulting in the activation of S6 ribosomal protein's translation of 5'TOP mRNA transcripts (10). Hamartin is phosphorylated by CDK1 (cdc2) at Thr417, Ser584 and Thr1047 in cells in G2/M phase of the cell cycle (11).

Background References

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6. Tapon, N. et al. (2001) *Cell* 105, 345-355.
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8. Lamb, R.F. et al. (2000) *Nat. Cell Biol.* 2, 281-287.
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10. Manning, B.D. and Cantley, L.C. (2003) *Trends Biochem Sci.* 28, 573-576.
11. Astrinidis, A. et al. (2003) *J. Biol. Chem.* 278, 51372-51379.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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