Revision 4

#6935 Store at -20C

Hamartin/TSC1 (D43E2) Rabbit mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R	Endogenous	150-170	Rabbit IgG	#Q92574	7248

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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 (D43E2) Rabbit mAb recognizes endogenous levels of total TSC1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val640 of human TSC1.

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 tuberin, respectively (2,3). Hamartin and tuberin 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 tuberin/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 tuberin 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

1. Sparagana, S.P. and Roach, E.S. (2000) *Curr. Opin. Neurol.* 13, 115-119.
2. van Slegtenhorst, M. et al. (1997) *Science* 277, 805-808.
3. No authors listed. (1993) *Cell* 75, 1305-1315.
4. Plank, T.L. et al. (1998) *Cancer Res.* 58, 4766-4770.
5. Xiao, G. et al. (1997) *J. Biol. Chem.* 272, 6097-6100.
6. Tapon, N. et al. (2001) *Cell* 105, 345-355.
7. Henry, K.W. et al. (1998) *J. Biol. Chem.* 273, 20535-20539.
8. Lamb, R.F. et al. (2000) *Nat. Cell Biol.* 2, 281-287.
9. Haddad, L.A. et al. (2002) *J. Biol. Chem.* 277, 44180-44186.
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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

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

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Limited Uses

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