

Store at -20C  
#6935**Hamartin/TSC1 (D43E2) Rabbit mAb**

**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

**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**

Western Blotting  
Immunoprecipitation

**Dilution**

1:1000  
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 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**

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

**Trademarks and Patents**

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](http://cellsignal.com/trademarks) for more information.

**Limited Uses**

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's

terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.