

#4935 Store at -20C	Rheb Antibody	
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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene ID:
W, IHC-P, FC-FP	H M R Sc	Endogenous	21	Rabbit	#Q15382	6009

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunohistochemistry (Paraffin)	1:200
Flow Cytometry (Fixed/Permeabilized)	1:50

Storage

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

Specificity/Sensitivity

Rheb Antibody detects endogenous levels of Rheb. The antibody does not cross-react with other family members at physiological levels.

Species predicted to react based on 100% sequence homology

Bovine

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Asn50 of Rheb. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Ras Homolog Enriched in Brain (Rheb) is an evolutionarily conserved member of the Ras family of small GTP-binding proteins originally found to be rapidly induced by synaptic activity in the hippocampus following seizure (1). While it is expressed at relatively high levels in the brain, Rheb is widely expressed in other tissues and may be induced by growth factor stimulation. Like other Ras family members, Rheb triggers activation of the Raf-MEK-MAPK pathway (2). Biochemical and genetic studies demonstrate that Rheb has an important role in regulating the insulin/TOR signaling pathway (3-6). The mammalian target of rapamycin (mTOR) is a serine/threonine protein kinase that acts as a sensor for ATP and amino acids, balancing the availability of nutrients with translation and cell growth. The tuberin/hamartin (TSC2/TSC1) complex inhibits mTOR activity indirectly by inhibiting Rheb through the tuberin GAP activity (7).

Background References

1. Yamagata, K. et al. (1994) *J Biol Chem* 269, 16333-9.
2. Yee, W.M. and Worley, P.F. (1997) *Mol Cell Biol* 17, 921-33.
3. Inoki, K. et al. (2003) *Genes Dev* 17, 1829-34.
4. Stocker, H. et al. (2003) *Nat Cell Biol* 5, 559-65.
5. Saucedo, L.J. et al. (2003) *Nat Cell Biol* 5, 566-71.
6. Zhang, Y. et al. (2003) *Nat Cell Biol* 5, 578-81.
7. Li, Y. et al. (2004) *Trends Biochem Sci* 29, 32-8.

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 **IHC-P:** Immunohistochemistry (Paraffin) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Sc:** S. cerevisiae

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