

Rheb Antibody

Rheb (NT): Ras homolog enriched in brain

CATALOG NO.: 3499

BACKGROUND:

Rheb (Ras homolog enriched in brain) 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. Similar to other 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/Target of rapamycin (TOR) signaling pathway (3-5). TOR is a serine/threonine protein kinase that acts as a sensor for ATP and amino acids, balancing the availability of nutrients with protein translation and cell growth. A dimeric protein complex termed TSC1/TSC2 indirectly inhibits TOR activity by inhibiting Rheb via the GAP activity of TSC2 (3).

SOURCE:

Rabbit Rheb polyclonal antibody was raised against a 14 amino acid peptide from the amino terminus of human Rheb (Genbank accession No. AAH16155).

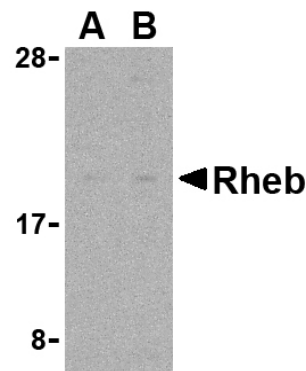
APPLICATION:

Rheb antibody can be used for the detection of Rheb by Western blot at 2 - 4 µg/ml. Rat heart cell lysate can be used as positive control. Rheb antibody is human, mouse, and rat reactive. Post-translationally modified Rheb is sometimes observed at higher molecular weight.

This product is for research use only.

STORAGE:

Rheb antibody is supplied as immunoaffinity purified IgG in PBS containing 0.02% sodium azide. Store at 4°C, stable for one year.



Western blot analysis of Rheb in rat heart cell lysate with Rheb antibody at (A) 2 and (B) 4 µg/ml.

RELATED PRODUCTS:

Blocking peptide, Catalog No. **3499P**.
Rat Heart Cell lysate, Catalog No. **1461**.
Rheb Antibody (IN), Catalog No. **3501**.
TOR Antibody (NT), Catalog No. **3485**.
TSC1 Antibody (IN), Catalog No. **3505**.
TSC2 Antibody (CT), Catalog No. **3507**.

REFERENCES:

1. Yamagata K, Sanders LK, Kaufman WE, et al. rheb, a growth factor- and synaptic activity-regulated gene, encodes a novel Ras-related protein. *J. Biol. Chem.* 1994; 269:16333-9.
2. Yee WM and Worley PF. Rheb interacts with Raf-1 kinase and may function to integrate growth factor- and protein kinase A-dependent signals. *Mol. Cell. Biol.* 1997; 17:921-3.
3. Inoki K, Li Y, Xu T, et al. Rheb GTPase is a direct target of TSC2 GAP activity and regulates mTOR signaling. *Genes Dev.* 2003; 17:1829-34.
4. Stocker H, Radimerski T, Schindelholz B, et al. Rheb is an essential regulator of S6K in controlling cell growth in Drosophila. *Nat. Cell Biol.* 2003; 5:559-65.
5. Saucedo LJ, Gao X, Chiarelli DA. Rheb promotes cell growth as a component of the insulin/TOR signalling network. *Nat. Cell Biol.* 2003; 5:566-71. (RD0606)