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# RHEB Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11767b

## Product Information

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| **Application** | WB, IHC-P, E |
| **Primary Accession** | Q15382 |
| **Other Accession** | Q62639, Q921J2, Q56JV3, NP_005605.1 |
| **Reactivity** | Human |
| **Predicted** | Bovine, Mouse, Rat, Canine, Rabbit |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Clone Names** | RB14411 |
| **Calculated MW** | 20497 |
| **Antigen Region** | 104-134 |

## Additional Information

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| **Gene ID** | 6009 |
| **Other Names** | GTP-binding protein Rheb, Ras homolog enriched in brain, RHEB, RHEB2 |
| **Target/Specificity** | This RHEB antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 104-134 amino acids from the C-terminal region of human RHEB. |
| **Dilution** | WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration. |
| **Format** | Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS. |
| **Storage** | Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | RHEB Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | RHEB {ECO:0000303\|PubMed:8543055, ECO:0000312\|HGNC:HGNC:10011} |
| **Function** | Small GTPase that acts as an allosteric activator of the canonical mTORC1 complex, an evolutionarily conserved central nutrient sensor that stimulates anabolic reactions and macromolecule biosynthesis to promote cellular |

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| | biomass generation and growth (PubMed:12172553, PubMed:12271141, PubMed:12842888, PubMed:12869586, PubMed:12906785, PubMed:15340059, PubMed:15854902, PubMed:16098514, PubMed:20381137, PubMed:22819219, PubMed:24529379, PubMed:29416044, PubMed:32470140, PubMed:33157014, PubMed:25816988). In response to nutrients, growth factors or amino acids, specifically activates the protein kinase activity of MTOR, the catalytic component of the mTORC1 complex: acts by causing a conformational change that allows the alignment of residues in the active site of MTOR, thereby enhancing the phosphorylation of ribosomal protein S6 kinase (RPS6KB1 and RPS6KB2) and EIF4EBP1 (4E-BP1) (PubMed:29236692, PubMed:33157014). RHEB is also required for localization of the TSC-TBC complex to lysosomal membranes (PubMed:24529379). In response to starvation, RHEB is inactivated by the TSC-TBC complex, preventing activation of mTORC1 (PubMed:24529379, PubMed:33157014). Has low intrinsic GTPase activity (PubMed:15340059). |
| **Cellular Location** | Endomembrane system; Lipid-anchor; Cytoplasmic side. Lysosome membrane; Lipid-anchor; Cytoplasmic side. Golgi apparatus membrane; Lipid-anchor; Cytoplasmic side. Endoplasmic reticulum membrane; Lipid-anchor; Cytoplasmic side. Cytoplasm, cytosol. Note=Farnesylation is required for recruitment to lysosomal membranes, where it activates the mTORC1 complex. |
| **Tissue Location** | Ubiquitous (PubMed:8543055). Highest levels observed in skeletal and cardiac muscle (PubMed:8543055) |

## Background

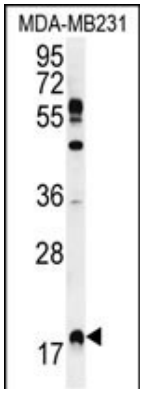
This gene is a member of the small GTPase superfamily and encodes a lipid-anchored, cell membrane protein with five repeats of the RAS-related GTP-binding region. This protein is vital in regulation of growth and cell cycle progression due to its role in the insulin/TOR/S6K signaling pathway. The protein has GTPase activity and shuttles between a GDP-bound form and a GTP-bound form, and farnesylation of the protein is required for this activity. Three pseudogenes have been mapped, two on chromosome 10 and one on chromosome 22.

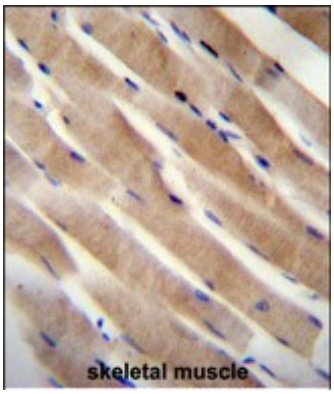
## References


Zheng, H., et al. Cancer Lett. 297(1):117-125(2010)
Kim, H.W., et al. Mol. Cell. Biol. 30(22):5406-5420(2010)
Karassek, S., et al. J. Biol. Chem. 285(44):33979-33991(2010)
Wagner, R.J., et al. Am. J. Physiol., Cell Physiol. 299 (1), C119-C127 (2010) :
Lu, Z.H., et al. Cancer Res. 70(8):3287-3298(2010)


## Images

RHEB Antibody (C-term) (Cat. #AP11767b) western blot analysis in MDA-MB231 cell line lysates (35ug/lane).This demonstrates the RHEB antibody detected the RHEB protein (arrow).




RHEB Antibody (C-term) (Cat. #AP11767b)immunohistochemistry analysis in formalin fixed and paraffin embedded human skeletal muscle followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of RHEB Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

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