

Rheb Protein, Human, Recombinant (His)

General Information

Synonyms:	Ras homolog enriched in brain;RHEB2
Protein Construction:	A DNA sequence encoding the human RHEB (Q15382)(Met1-Cys181) was fused with a polyhistidine tag at the N-terminus. Predicted N terminal: His
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q15382
Molecular Weight:	22.4 kDa (predicted); 21 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, 500 mM NaCl, 10% gly, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

RHEB is a recently discovered member of the Ras superfamily that may be involved in neural plasticity. This function is novel and not typically associated with the Ras proteins. RHEB 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. RHEB 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 RHEB is required for this activity. Three pseudogenes have been mapped, two on chromosome 1 and one on chromosome 22.

Reference

Karbowniczek, et al. (2004) Regulation of B-Raf kinase activity by tuberin and Rheb is mammalian target of rapamycin (mTOR)-independent. *J Biol Chem.* 279(29):29930-7.

Long, et al. (2005) Rheb binds and regulates the mTOR kinase. *Curr Biol.* 15(8):702-13.

Mizuki N, et al. (1996) Isolation of cDNA and genomic clones of a human Ras-related GTP-binding protein gene and its chromosomal localization to the long arm of chromosome 7, 7q36. *Genomics.* 34(1):114-8.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481