

Recombinant Human ROCK1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50856

Size: 10ug, 100ug

Protein Name: Rho-associated protein kinase 1 (EC 2.7.11.39) (Renal carcinoma antigen NY-REN-35) (Rho-associated, coiled-coil-containing protein kinase 1) (Rho-associated, coiled-coil-containing protein kinase I) (ROCK-I) (p160 ROCK-1) (p160ROCK)

Synonym: ROCK1

UniProt ID: Q13464

UniProt Link: www.uniprot.org/uniprotkb/Q13464/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1354 AA

Molecular Weight: 158 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSTGDSFETRF EKMDNLLRDPKSEVNSDCLLDGLDALVYDLDFPALRKNKNIDNFLSRYKDTINKIRD
LRMKAEDYEVVKVIGRGAFGEVQLVRHKSTRKVYAMKLLSKFEMIKRSDSAFFWEERDIMAFANSP
WVQLFYAFQDDRYLYMVMEMPGGDLVNLSNYDVPEKWARFYTAEVVLALDAIHSMGFIHRDV
KPDNMLLDKSGHLKLADFGTCMKMNKEGMVRCDTAVGTPDYISPEVLKSQGGDGYYGRECDWWS
VGVFLYEMLVGDTPFYADSLVGTYSKIMNHKNSLTFFDDNDISKEAKNLICAFLLTDREVRLGRNGVEE
IKRHLFFKNDQWAWETLRDTVAPVVPDLSSDIDTSNFDLEEDKGEEETFPIPKAFVGNQLPFVGFTY
YSNRRYLSSANPNDRNRTSSNADKSLQESLQKTIYKLEEQHLNEMQLKDEMEQKCRTSNIKLDKIMKE
LDEEGNQRRNLESTVSQIEKEKMLLQHRINEYQRKAEQENKRRNVENEVSTLKDQLEDLKKVSQN
SQLANEKLSQLKQKLEEANDLLRTESDTAVRLRKSHTMSKSSISQLESNRELQERNRILENSKSQT
DKDYYQLQAILEAERRDRGHDSEMIQDLQARITSLQEEVKHLKHNLEKVEGERKEAQDMLNHSEKE
KNNLEIDLNYKLKSLQQRLEQEVNEHKVTKARLTDKHQSIEEAKSVAMCEMEKKLKEEREAREKAEN
RVVQIEKQCSMLDVLKQSQKLEHLTGNKERMEDEVKNLTLQLEQESNKRLLQLNELKTQAFQAD
NLKGLEKQMKQEINTLLEAKRLLFELAQTLTKQYRGNEGQMRELQDQLEAEQYFSTLYKTQVKELKE
EIEEKNRENKKIQELQNEKETLATQLDLAETKAESQLARGLLLEEYQFELTQESKKAASRNRRQETD
KDHTVSRLEEANSMLTKDIEILRRENEELTEKMKAEEEEYKLEKEEEEISNLKAAFEKNINTERTLKTQA
VNKLAIEIMNRKDFKIDRKANTQDLRKKEKENRKLQLELNQEREKFNQMVVKHQKELNDMQAQLVE
ECAHRNELQMQLASKESDIEQLRAKLLDLS DSTSVASFPSA DETDGNLPESRIEGWLSVPNRRGNIKR



YGWKKQYVVVSSKKILFYNDEQDKEQSNPSMVLDDIDKLFHVRPVTQGDVYRAETEEIPKIFQILYANE
GECRKDVEMEPVQQAECTNFQNHKGHEFIPTLYHFPANCDACAKPLWHVFKPPPAAECRRCHVKC
HRDHLDDKEDLICPCKVSYDVTSDARDMLLLACSQDEQKKWVTHLVKKIPKNPPSGFVRASPTLSTR
STANQSFRRKVVKNTSGKTS

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Rho-associated protein kinase 1 (EC 2.7.11.39) (Renal carcinoma antigen NY-REN-35) (Rho-associated, coiled-coil-containing protein kinase 1) (Rho-associated, coiled-coil-containing protein kinase I) (ROCK-I) (p160 ROCK-1) (p160ROCK) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Protein kinase which is a key regulator of the actin cytoskeleton and cell polarity (PubMed:10436159, PubMed:10652353, PubMed:11018042, PubMed:11283607, PubMed:17158456, PubMed:18573880, PubMed:19131646, PubMed:8617235, PubMed:9722579). Involved in regulation of smooth muscle contraction, actin cytoskeleton organization, stress fiber and focal adhesion formation, neurite retraction, cell adhesion and motility via phosphorylation of DAPK3, GFAP, LIMK1, LIMK2, MYL9/MLC2, TPPP, PFN1 and PPP1R12A (PubMed:10436159, PubMed:10652353, PubMed:11018042, PubMed:11283607, PubMed:17158456, PubMed:18573880, PubMed:19131646, PubMed:23093407, PubMed:23355470, PubMed:8617235, PubMed:9722579). Phosphorylates FHOD1 and acts synergistically with it to promote SRC-dependent non-apoptotic plasma membrane blebbing (PubMed:18694941). Phosphorylates JIP3 and regulates the recruitment of JNK to JIP3 upon UVB-induced stress (PubMed:19036714). Acts as a suppressor of inflammatory cell migration by regulating PTEN phosphorylation and stability (By similarity). Acts as a negative regulator of VEGF-induced angiogenic endothelial cell activation (PubMed:19181962). Required for centrosome positioning and centrosome-dependent exit from mitosis (By similarity). Plays a role in terminal erythroid differentiation (PubMed:21072057). Inhibits podocyte motility via regulation of actin cytoskeletal dynamics and phosphorylation of CFL1 (By similarity). Promotes keratinocyte terminal differentiation (PubMed:19997641). Involved in osteoblast compaction through the fibronectin fibrillogenesis cell-mediated matrix assembly process, essential for osteoblast mineralization (By similarity). May regulate closure of the eyelids and ventral body wall by inducing the assembly of actomyosin bundles (By similarity).

Subcellular Localization: Cytoplasm . Cytoplasm, cytoskeleton, microtubule organizing center, centrosome, centriole . Golgi apparatus membrane ; Peripheral membrane protein . Cell projection, bleb . Cytoplasm, cytoskeleton . Cell membrane . Cell projection, lamellipodium . Cell projection, ruffle . Note=A small proportion is associated with Golgi membranes (PubMed:12773565). Associated with the mother centriole and an intercentriolar linker (By similarity). Colocalizes with

ITGB1BP1 and ITGB1 at the cell membrane predominantly in lamellipodia and membrane ruffles, but also in retraction fibers (By similarity). Localizes at the cell membrane in an ITGB1BP1-dependent manner (By similarity).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.