

Recombinant Mouse RC3H1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51600

Size: 10ug, 100ug

Protein Name: Roquin-1 (Roquin) (EC 2.3.2.27) (Protein Sanroque) (RING finger and C3H zinc finger protein 1) (RING finger and CCCH-type zinc finger domain-containing protein 1)

Synonym: Rc3h1, Gm551, Kiaa2025

UniProt ID: Q4VGL6

UniProt Link: www.uniprot.org/uniprotkb/Q4VGL6/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1130 AA

Molecular Weight: 125 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPVQAPQWTDFLSCPICTQTFDETIRKPISLGCGHTVCKMCLNKLHRKACPFDQTTINTDIELLPVNS
ALLQLVGAQIPEQQPITLCSGVEDTKHYEEAKKCVEELALYLKPLSSARGVGLNSTTQSVLSRPMQR
KLVTLVHCQLVEEEGRIRAMRAARSLGERTVTTELILQHQNPPQLSSNLWAAVRARGCQFLGPAMQE
EALKLVLLALEDGSALSRKVLVLFVVQRLEPRFPQASKTSIGHVVQLLYRASCCKVTKRDEDSSLMQL
KEEFRTYEALRREHDSQIVQIAMEAGLRIAPDQWSSLLYGDQSHKSHMQSIIDKLQTPASFAQSVQE
LTIALQRTGDPANLNRLRPHLELLANIDPSPDAPPPTWEQLENGLVAVRTVVHGLVDYIQNHSSKKG
DQQQPPQHSHKYKTYMCRDMKQRGGCPRGASCTFAHSQEELEKFRKMNKRLVPRRPLSASLGQLN
EVGLPSAPILSDESAVDLSNRKPPALPNGIASSGSTVTQLIPRGTDPSFDSSLKPKLDHLSSSAPGS
PPDLLESAPKSISALPVNPHVPPRGPTDLPPMPVTKPIQMVPRGSQLYPAQQADVYYQDPRGSAP
AFETAPYQQGMYYTPPPCVSRFVRPPPSAPEPGPPYLDHYSPLYQDRVINSQYGTQPQQYPPMYP
AHYDGRRVYPAQSYTREEMFRESPIPIDIPSAAVPSYVPESRERYQQVEGYYPVAPHPAQIRPSYPR
DPPYSRLPPPQPHPSLDELHRRRKEIMAELEERKVISPPPFAPSPTLPPAFHPPEEFLDEDLKVAGKYK
ANDYSQYSPWSCDTIGSYIGTKDAKPKDVVAAGSVEMMNVESKGTREQRDLQRRAVETSDDDLIP
FGDRPTVSRFGAISRTSKTLYQGAGPLQAIAPQGAPTKSINISDYSAYGAHGGWGDSPYSPHANIPP
QGHFIEREKMSMAEVASHGKPLLSAEREQLRLELQQLNHQISQQTQLRGLEAVSNRLVLQREVNTL
ASQPQPPQLPPKWPGMISSEQLSLELHQVEREIGKRTRELSMENQCSVDMKSKLGTSKQAENGQP
EPQNKIRTEDLTTLFSDVPNGSALTQENLSLLSNKTSSLNLSEDEGGGDNDNSQRSGVVSNSAP

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 Roquin-1 (Roquin) (EC 2.3.2.27) (Protein Sanroque) (RING finger and C3H zinc finger protein 1) (RING finger and CCCH-type zinc finger domain-containing protein 1) 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: Post-transcriptional repressor of mRNAs containing a conserved stem loop motif, called constitutive decay element (CDE), which is often located in the 3'-UTR, as in HMGXB3, ICOS, IER3, NFKBID, NFKBIZ, PPP1R10, TNF, TNFRSF4 and in many more mRNAs (PubMed:18172933, PubMed:23663784, PubMed:25026077). Cleaves translationally inactive mRNAs harboring a stem-loop (SL), often located in their 3'-UTRs, during the early phase of inflammation in a helicase UPF1-independent manner (PubMed:26000482). Binds to CDE and promotes mRNA deadenylation and degradation. This process does not involve miRNAs (PubMed:20412057, PubMed:20639877). In follicular helper T (T_{fh}) cells, represses of ICOS and TNFRSF4/Ox40 expression, thus preventing spontaneous T_{fh} cell differentiation, germinal center B-cell differentiation in the absence of immunization and autoimmunity. In resting or LPS-stimulated macrophages, controls inflammation by suppressing TNF expression. Also recognizes CDE in its own mRNA and in that of paralogous RC3H2, possibly leading to feedback loop regulation (PubMed:15917799, PubMed:23583642, PubMed:23583643). Inhibits cooperatively with ZC3H12A the differentiation of helper T cells Th17 in lungs. They repress target mRNA encoding the Th17 cell-promoting factors IL6, ICOS, REL, IRF4, NFKBID and NFKBIZ. The cooperation requires RNA-binding by RC3H1 and the nuclease activity of ZC3H12A (PubMed:25282160). Recognizes and binds mRNAs containing a hexaloop stem-loop motif, called alternative decay element (ADE) (PubMed:27010430). Together with ZC3H12A, destabilizes TNFRSF4/OX40 mRNA by binding to the conserved stem loop structure in its 3'UTR (PubMed:29244194). Able to interact with double-stranded RNA (By similarity). miRNA-binding protein that regulates microRNA homeostasis. Enhances DICER-mediated processing of pre-MIR146a but reduces mature MIR146a levels through an increase of 3' end uridylation. Both inhibits ICOS mRNA expression and they may act together to exert the suppression (PubMed:25697406). Acts as a ubiquitin E3 ligase. Pairs with E2 enzymes UBE2A, UBE2B, UBE2D2, UBE2F, UBE2G1, UBE2G2 and UBE2L3 and produces polyubiquitin chains. Shows the strongest activity when paired with UBE2N:UBE2V1 or UBE2N:UBE2V2 E2 complexes and generate both short and long polyubiquitin chains (By similarity).

Subcellular Localization: Cytoplasm, P-body . Cytoplasmic granule . Note=During stress, such as that induced by arsenite treatment, localizes to cytosolic stress granules (PubMed:26000482). Localization to stress granules, but not to P-bodies, depends upon the RING-type zinc finger. ICOS repression may correlate with the localization to P-bodies, not to stress granules (PubMed:20639877).

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.