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RC3H1 Antibody

Catalog # ASC11623

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q5TC82
Other Accession	NP_742068, 73695473
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	125736
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	RC3H1 antibody can be used for detection of RC3H1 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	149041
Other Names	Roquin-1, Roquin, RING finger and C3H zinc finger protein 1, RING finger and CCCH-type zinc finger domain-containing protein 1, RING finger protein 198, RC3H1, KIAA2025, RNF198
Target/Specificity	RC3H1; At least three isoforms of RC3H1 are known to exist; this antibody will detect all three isoforms.
Reconstitution & Storage	RC3H1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	RC3H1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RC3H1 (HGNC:29434)
Synonyms	KIAA2025, RNF198
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:25026078, PubMed:31636267). 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 (By similarity). Binds to CDE and promotes mRNA deadenylation and degradation. This process does not involve miRNAs (By

	similarity). In follicular helper T (Tfh) cells, represses of ICOS and TNFRSF4 expression, thus preventing spontaneous Tfh cell differentiation, germinal center B-cell differentiation in the absence of immunization and autoimmunity (By similarity). In resting or LPS-stimulated macrophages, controls inflammation by suppressing TNF expression (By similarity). Also recognizes CDE in its own mRNA and in that of paralogous RC3H2, possibly leading to feedback loop regulation (By similarity). Recognizes and binds mRNAs containing a hexaloop stem-loop motif, called alternative decay element (ADE) (By similarity). Together with ZC3H12A, destabilizes TNFRSF4/OX40 mRNA by binding to the conserved stem loop structure in its 3'UTR (By similarity). Able to interact with double-stranded RNA (dsRNA) (PubMed:25026078, PubMed:25504471). 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, PubMed:31636267). Acts as a ubiquitin E3 ligase. Pairs with E2 enzymes UBE2A, UBE2B, UBE2D2, UBE2F, UBE2G1, UBE2G2 and UBE2L3 and produces polyubiquitin chains (PubMed:26489670). Shows the strongest activity when paired with UBE2N:UBE2V1 or UBE2N:UBE2V2 E2 complexes and generate both short and long polyubiquitin chains (PubMed:26489670).
Cellular Location	Cytoplasm, P-body. Cytoplasmic granule {ECO:0000250|UniProtKB:Q4VGL6}. Note=During stress, such as that induced by arsenite treatment, localizes to cytosolic stress granules (By similarity). Localization to stress granules, but not to P-bodies, depends upon the RING-type zinc finger (By similarity). ICOS repression may correlate with the localization to P- bodies, not to stress granules (By similarity) {ECO:0000250|UniProtKB:Q4VGL6}
Tissue Location	Widely expressed. Expressed at higher level in cerebellum, spleen, ovary and liver. {ECO:0000269|Ref.3}

Background

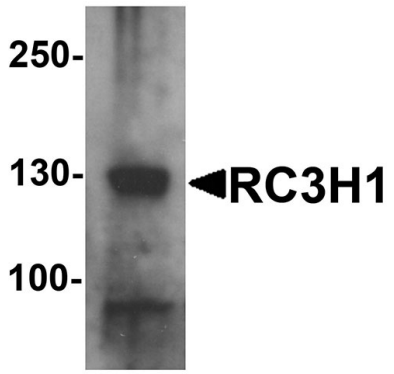
RC3H1 Antibody: The ring finger protein RC3H1, also known as Roquin, is a highly conserved member of the RING type ubiquitin ligase protein family whose M199R mutation leads to the excessive production of follicular helper T cells and germinal centers in the sanroque strain of mice, a strain with excessive IL-21 production and high titers of autoantibodies. The complete loss of RC3H1 induces early death and immune deregulation but not autoimmunity in RC3H1-null mice, suggesting that the mutant RC3H1 is more disruptive to the immune system than its complete loss.

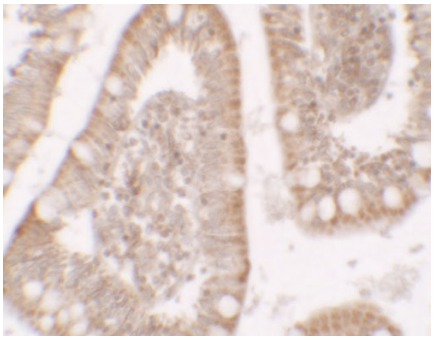
References

Vinuesa CG, Cook MC, Angelucci C, et al. A RING-type ubiquitin ligase family member required to repress follicular helper T cells and autoimmunity. Nature 2005; 435:452-8.
Bertossi A, Aichinger M, Sansonetti P, et al. Loss of Roquin induces immune deregulation but not autoimmunity. J. Exp. Med. 2011; 208:1749-56.

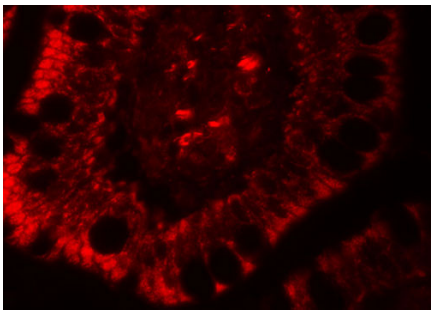
Images

Western blot analysis of RC3H1 in HeLa cell lysate with RC3H1 antibody at 1 µg/mL





Immunohistochemistry of RC3H1 in human small intestine tissue with RC3H1 antibody at 5 µg/ml.



Immunofluorescence of RC3H1 in human small intestine tissue with RC3H1 antibody at 20 µg/ml.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.