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TRIM21 Antibody

Catalog # ASC11777

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P19474
Other Accession	NP_003132, 15208660
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	54170
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TRIM21 antibody can be used for detection of TRIM21 by Western blot at 0.5 - 1 □g/ml. Antibody can also be used for Immunohistochemistry at 5 □g/mL. For Immunoflorescence start at 20 □g/mL.

Additional Information

Gene ID	6737
Other Names	E3 ubiquitin-protein ligase TRIM21, 6.3.2.-, 52 kDa Ro protein, 52 kDa ribonucleoprotein autoantigen Ro/SS-A, RING finger protein 81, Ro(SS-A), Sjoegren syndrome type A antigen, SS-A, Tripartite motif-containing protein 21, TRIM21, RNF81, RO52, SSA1
Target/Specificity	TRIM21; TRIM21 antibody is human specific. This antibody is predicted to not cross-react with TRIM6.
Reconstitution & Storage	TRIM21 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	TRIM21 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TRIM21 (HGNC:11312)
Synonyms	RNF81, RO52, SSA1
Function	E3 ubiquitin-protein ligase whose activity is dependent on E2 enzymes, UBE2D1, UBE2D2, UBE2E1 and UBE2E2 (PubMed:16297862, PubMed:16316627, PubMed:16472766, PubMed:16880511, PubMed:18022694, PubMed:18361920, PubMed:18641315, PubMed:18845142, PubMed:19675099, PubMed:26347139). Forms a ubiquitin ligase complex in cooperation with the E2 UBE2D2 that is used not only for

	the ubiquitination of USP4 and IKBKB but also for its self-ubiquitination (PubMed:16880511, PubMed:19675099). Component of cullin-RING-based SCF (SKP1-CUL1-F-box protein) E3 ubiquitin-protein ligase complexes such as SCF(SKP2)-like complexes (PubMed:16880511). A TRIM21-containing SCF(SKP2)-like complex is shown to mediate ubiquitination of CDKN1B ('Thr-187' phosphorylated- form), thereby promoting its degradation by the proteasome (PubMed:16880511). Monoubiquitinates IKBKB that will negatively regulates Tax-induced NF-kappa-B signaling (PubMed:19675099). Negatively regulates IFN-beta production post-pathogen recognition by catalyzing polyubiquitin-mediated degradation of IRF3 (PubMed:18641315). Mediates the ubiquitin-mediated proteasomal degradation of IgG1 heavy chain, which is linked to the VCP-mediated ER-associated degradation (ERAD) pathway (PubMed:18022694). Promotes IRF8 ubiquitination, which enhanced the ability of IRF8 to stimulate cytokine genes transcription in macrophages (By similarity). Plays a role in the regulation of the cell cycle progression (PubMed:16880511). Enhances the decapping activity of DCP2 (PubMed:18361920). Exists as a ribonucleoprotein particle present in all mammalian cells studied and composed of a single polypeptide and one of four small RNA molecules (PubMed:1985094, PubMed:8666824). At least two isoforms are present in nucleated and red blood cells, and tissue specific differences in RO/SSA proteins have been identified (PubMed:8666824). The common feature of these proteins is their ability to bind HY RNAs.2 (PubMed:8666824). Involved in the regulation of innate immunity and the inflammatory response in response to IFNG/IFN-gamma (PubMed:26347139). Organizes autophagic machinery by serving as a platform for the assembly of ULK1, Beclin 1/BECN1 and ATG8 family members and recognizes specific autophagy targets, thus coordinating target recognition with assembly of the autophagic apparatus and initiation of autophagy (PubMed:26347139). Also regulates autophagy through FIP200/RB1CC1 ubiquitination and subsequent decreased protein stability (PubMed:36359729). Represses the innate antiviral response by facilitating the formation of the NMI-IFI35 complex through 'Lys-63'- linked ubiquitination of NMI (PubMed:26342464). During viral infection, promotes cell pyroptosis by mediating 'Lys-6'-linked ubiquitination of ISG12a/IFI27, facilitating its translocation into the mitochondria and subsequent CASP3 activation (PubMed:36426955). When up-regulated through the IFN/JAK/STAT signaling pathway, promotes 'Lys-27'-linked ubiquitination of MAVS, leading to the recruitment of TBK1 and up- regulation of innate immunity (PubMed:29743353). Mediates 'Lys-63'- linked polyubiquitination of G3BP1 in response to heat shock, leading to stress granule disassembly (PubMed:36692217).
Cellular Location	Cytoplasm. Cytoplasmic vesicle, autophagosome. Nucleus. Cytoplasm, P-body. Cytoplasm, Stress granule. Note=Enters the nucleus upon exposure to nitric oxide (PubMed:18361920). Localizes to small dot- or rod-like structures in the cytoplasm, called processing bodies (P-bodies) that are located underneath the plasma membrane and also diffusely in the cytoplasm (PubMed:18361920). They are located along the microtubules and are highly motile in cells (PubMed:18361920). Colocalizes with DCP2 in P-bodies (PubMed:18361920). Localizes to stress granules in response to oxidative stress (PubMed:36692217).
Tissue Location	Isoform 1 and isoform 2 are expressed in fetal and adult heart and fetal lung

Background

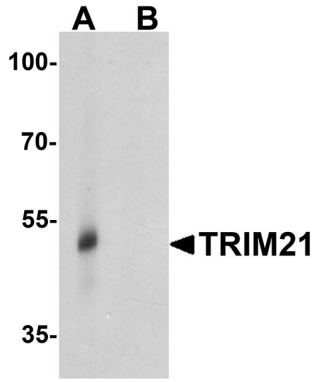
TRIM21, a member of the tripartite motif (TRIM) family, is a part of the RoSSA ribonucleoprotein, which includes a single polypeptide and one of four small RNA molecules. The RoSSA particle localizes to both the cytoplasm and the nucleus (1). RoSSA interacts with autoantigens in patients with Sjogren syndrome and systemic lupus erythematosus (2). TRIM21 also acts as a cytosolic antibody receptor; detection of

intracellular antibodies activate immune signaling by stimulating the transcription factor pathways of NF-kappaB, AP-1, IRF3, IRF5, and IRF7, resulting in the production of proinflammatory cytokines and the induction of an antiviral state (3).

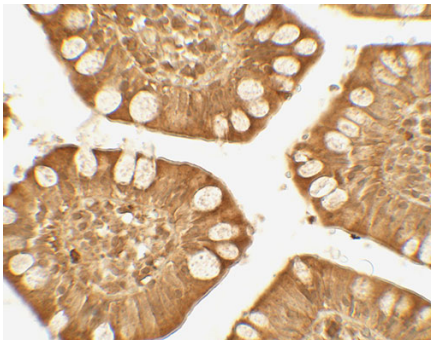
References

Oke V and Wahren-Herlenius M. The immunobiology of Ro52 (TRIM21) in autoimmunity: a critical review. J. Autoimmun. 2012; 39:77-82.
Frank MB, McCubbin VR, and Heldermon C. Expression and DNA binding of the human 52 kDa Ro/SSA autoantigen. Biochem. J. 1995; 305:359-62.
McEwan WA, Tam JC, Watkinson RE, et al. Intracellular antibody-bound pathogens stimulate immune signaling via the Fc receptor TRIM21. Nat. Immunol. 14:327-36.

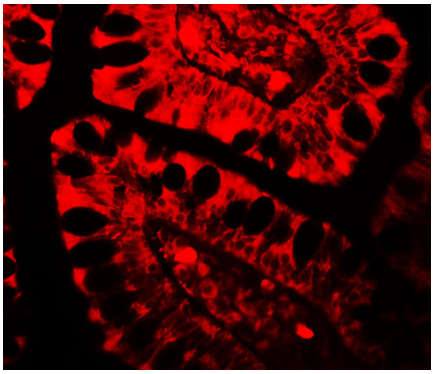
Images



Western blot analysis of TRIM21 in human lung tissue lysate with TRIM21 antibody at 0.5 µg/ml in (A) the absence and (B) the presence of blocking peptide.



Immunohistochemistry of TRIM21 in human small intestine tissue with TRIM21 antibody at 5 µg/mL.



Immunofluorescence of TRIM21 in human small intestine tissue with TRIM21 antibody at 20 µg/mL.

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