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RCAD Rabbit pAb

Catalog # AP98443

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	O94874
Other Accession	O94874
Predicted	Rat, Pig, Human, Mouse, Rabbit, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	89595
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human RCAD
Epitope Specificity	101-200/794
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the UFL1 family.
Post-translational modifications	Ubiquitinated, leading to its degradation by the proteasome. Interaction with CDK5RAP3 protects each other against ubiquitination and degradation via the proteasome.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	E3 UFM1-protein ligase that mediates ufmylation of target proteins such as DDRGK1/C20orf116. The function of ufmylation is unknown. May act as a tumor suppressor by inhibiting cell invasion, blocking NF-kappa-B signaling and increasing stability of CDK5RAP3.

Additional Information

Gene ID	23376
Other Names	KIAA0776; Maxer; NLBP; RCAD; 1810074P20Rik; mKIAA0776; RGD1309308; UFL1_HUMAN; UFL1; E3 UFM1-protein transferase 1; Multiple alpha-helix protein located at ER; Novel LZAP-binding protein; Regulator of C53/LZAP and DDRGK1; 2.3.2.-; UFL1_MOUSE; UFL1_RAT; UFM1 specific ligase 1; UFM1-specific ligase 1; Regulator of CDK5RAP3 and DDRGK1
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	UFL1 {ECO:0000303|PubMed:30354401, ECO:0000312|HGNC:HGNC:23039}
Function	E3 protein ligase that mediates ufmylation, the covalent attachment of the ubiquitin-like modifier UFM1 to lysine residues on target proteins, and which plays a key role in various processes, such as ribosome recycling, response to DNA damage, interferon response or reticulophagy (also called ER-phagy) (PubMed:20018847, PubMed:20164180, PubMed:20228063, PubMed:25219498, PubMed:27351204, PubMed:30626644, PubMed:30783677, PubMed:32160526, PubMed:32807901, PubMed:35394863, PubMed:36121123, PubMed:36543799, PubMed:36893266, PubMed:37036982, PubMed:37311461, PubMed:37595036, PubMed:37795761, PubMed:38377992, PubMed:38383785, PubMed:38383789). Catalyzes ufmylation of many protein, such as CD274/PD-L1, CDK5RAP3, CYB5R3, DDRGK1, EIF6, histone H4, MRE11, P4HB, PDCD1/PD-1, TRIP4, RPN1, RPS20/uS10, RPL10/uL16, RPL26/uL24, SYVN1/HRD1 and TP53/p53 (PubMed:20018847, PubMed:20531390, PubMed:25219498, PubMed:30783677, PubMed:30886146, PubMed:32160526, PubMed:35753586, PubMed:36543799, PubMed:36893266, PubMed:37036982, PubMed:37595036, PubMed:37795761, PubMed:38383785, PubMed:38383789). As part of the UREL complex, plays a key role in ribosome recycling by catalyzing mono-ufmylation of RPL26/uL24 subunit of the 60S ribosome (PubMed:38383785, PubMed:38383789). Ufmylation of RPL26/uL24 occurs on free 60S ribosomes following ribosome dissociation: it weakens the junction between post-termination 60S subunits and SEC61 translocons, promoting release and recycling of the large ribosomal subunit from the endoplasmic reticulum membrane (PubMed:38383785, PubMed:38383789). Ufmylation of RPL26/uL24 and subsequent 60S ribosome recycling either take place after normal termination of translation or after ribosome stalling during cotranslational translocation at the endoplasmic reticulum (PubMed:37036982, PubMed:37595036, PubMed:38383785, PubMed:38383789). Involved in reticulophagy in response to endoplasmic reticulum stress by mediating ufmylation of proteins such as CYB5R3 and RPN1, thereby promoting lysosomal degradation of ufmylated proteins (PubMed:23152784, PubMed:32160526, PubMed:36543799). Ufmylation in response to endoplasmic reticulum stress is essential for processes such as hematopoiesis, blood vessel morphogenesis or inflammatory response (PubMed:32050156). Mediates ufmylation of DDRGK1 and CDK5RAP3; the role of these modifications is however unclear: as both DDRGK1 and CDK5RAP3 act as substrate adapters for ufmylation, it is uncertain whether ufmylation of these proteins is, a collateral effect or is required for ufmylation (PubMed:20018847, PubMed:20531390). Acts as a negative regulator of T-cell activation by mediating ufmylation and stabilization of PDCD1/PD-1 (PubMed:38377992). Also involved in the response to DNA damage: recruited to double-strand break sites following DNA damage and mediates monoufmylation of histone H4 and ufmylation of MRE11 (PubMed:30783677, PubMed:30886146). Mediates ufmylation of TP53/p53, promoting its stability (PubMed:32807901). Catalyzes ufmylation of TRIP4, thereby playing a role in nuclear receptor-mediated transcription (PubMed:25219498). Required for hematopoietic stem cell function and hematopoiesis (By similarity).
Cellular Location	Endoplasmic reticulum membrane. Cytoplasm, cytosol. Nucleus. Chromosome. Note=Recruited to double-strand breaks by the MRE11-RAD50-NBN (MRN) complex following DNA damage
Tissue Location	Ubiquitously expressed, with a high expression in liver (at protein level) (PubMed:20018847). Low expression in several invasive hepatocellular carcinomas, such Hep-G2, Hep 3B2.1-7, HLE and PLC (PubMed:20018847).

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