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RIPK1 Rabbit pAb

Catalog # AP99993

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q13546
Other Accession	Q13546
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	75931
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human RIPK1
Epitope Specificity	381-480/671
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 protein kinase superfamily. TKL Ser/Thr protein kinase family. Contains 1 death domain. Contains 1 protein kinase domain.
SUBUNIT	Interacts (via RIP homotypic interaction motif) with RIPK3 (via RIP homotypic interaction motif); this interaction induces RIPK1 necroptosis-specific phosphorylation, formation of the necroptosis-inducing complex. Interacts (via the death domain) with TNFRSF6 (via the death domain) and TRADD (via the death domain). Is recruited by TRADD to TNFRSF1A in a TNF-dependent process. Binds RNF216, EGFR, IKBKG, TRAF1, TRAF2 and TRAF3. Interacts with BNLF1. Interacts with SQSTM1 upon TNF-alpha stimulation. May interact with MAVS/IPS1. Interacts with ZFAND5. Interacts with RBCK.
Post-translational modifications	Proteolytically cleaved by caspase-8 during TNF-induced apoptosis. Cleavage abolishes NF-kappa-B activation and enhances pro-apototic signaling through the TRADD-FADD interaction. RIPK1 and RIPK3 undergo reciprocal auto- and trans-phosphorylation. Phosphorylation of Ser-161 by RIPK3 is necessary for the formation of the necroptosis-inducing complex. Ubiquitinated by 'Lys-11'-, 'Lys-48'-, 'Lys-63'- and linear-linked type ubiquitin. Polyubiquitination with 'Lys-63'-linked chains by TRAF2 induces association with the IKK complex. Deubiquitination of 'Lys-63'-linked chains and polyubiquitination with 'Lys-48'-linked chains by TNFAIP3 leads to RIPK1 proteasomal degradation and consequently downregulates TNF-alpha-induced NFkappa-B signaling. Linear polyubiquitinated; the head-to-tail polyubiquitination is mediated by the LUBAC complex. LPS-mediated activation of NF-kappa-B. Also ubiquitinated with 'Lys-11'-linked chains.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Essential adapter molecule for the activation of NF-kappa-B. Following different upstream signals (binding of inflammatory cytokines, stimulation of pathogen recognition receptors, or DNA damage), particular RIPK1-containing complexes are formed, initiating a limited number of cellular responses. Upon TNFA stimulation RIPK1 is recruited to a TRADD-TRAF complex initiated by TNFR1 trimerization. There, it is ubiquitinated via 'Lys-63'-link chains, inducing its association with the IKK complex, and its activation through

NEMO binding of polyubiquitin chains.

Additional Information

Gene ID	8737
Other Names	AIEFL; IMD57; RIP; RIP-1; RIP1; D330015H01Rik; Rinp; RIPK1_HUMAN; RIPK1; Cell death protein RIP; Receptor-interacting protein 1 (RIP-1); 2.7.11.1; RIPK1_MOUSE; receptor interacting serine/threonine kinase 1; receptor (TNFRSF)-interacting serine-threonine kinase 1; receptor-interacting protein kinase 1
Dilution	IHC-P=1:100-500,IHC-F=1:400-800,IF=1:100-500
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	RIPK1 (HGNC:10019)
Function	Serine-threonine kinase which is a key regulator of TNF- mediated apoptosis, necroptosis and inflammatory pathways (PubMed:17703191, PubMed:24144979, PubMed:31827280, PubMed:31827281, PubMed:32657447, PubMed:35831301). Exhibits kinase activity-dependent functions that regulate cell death and kinase-independent scaffold functions regulating inflammatory signaling and cell survival (PubMed:11101870, PubMed:19524512, PubMed:19524513, PubMed:29440439, PubMed:30988283). Has kinase-independent scaffold functions: upon binding of TNF to TNFR1, RIPK1 is recruited to the TNF-R1 signaling complex (TNF-RSC also known as complex I) where it acts as a scaffold protein promoting cell survival, in part, by activating the canonical NF-kappa-B pathway (By similarity). Kinase activity is essential to regulate necroptosis and apoptosis, two parallel forms of cell death: upon activation of its protein kinase activity, regulates assembly of two death-inducing complexes, namely complex IIa (RIPK1-FADD-CASP8), which drives apoptosis, and the complex IIb (RIPK1-RIPK3-MLKL), which drives necroptosis (By similarity). RIPK1 is required to limit CASP8- dependent TNFR1-induced apoptosis (By similarity). In normal conditions, RIPK1 acts as an inhibitor of RIPK3-dependent necroptosis, a process mediated by RIPK3 component of complex IIb, which catalyzes phosphorylation of MLKL upon induction by ZBP1 (PubMed:19524512, PubMed:19524513, PubMed:29440439, PubMed:30988283). Inhibits RIPK3- mediated necroptosis via FADD-mediated recruitment of CASP8, which cleaves RIPK1 and limits TNF-induced necroptosis (PubMed:19524512, PubMed:19524513, PubMed:29440439, PubMed:30988283). Required to inhibit apoptosis and necroptosis during embryonic development: acts by preventing the interaction of TRADD with FADD thereby limiting aberrant activation of CASP8 (By similarity). In addition to apoptosis and necroptosis, also involved in inflammatory response by promoting transcriptional production of pro-inflammatory cytokines, such as interleukin-6 (IL6) (PubMed:31827280, PubMed:31827281). Phosphorylates RIPK3: RIPK1 and RIPK3 undergo reciprocal auto- and trans- phosphorylation (PubMed:19524513). Phosphorylates DAB2IP at 'Ser-728' in a TNF-dependent manner, and thereby activates the MAP3K5-JNK apoptotic cascade (PubMed:15310755, PubMed:17389591). Required for ZBP1-induced

	NF-kappa-B activation in response to DNA damage (By similarity).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:Q60855}. Cell membrane {ECO:0000250|UniProtKB:Q9ZUF4}

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