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RIP1 Antibody

Catalog # ASC10238

Product Information

Application	E, IHC-P
Primary Accession	Q13546
Other Accession	NP_003795, 57242761
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	75931
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	RIP1 antibody can be used for detection of RIP1 by immunohistochemistry at 5 - 10 □g/mL.

Additional Information

Gene ID	8737
Other Names	RIP1 Antibody: RIP, RIP1, RIP, Cell death protein RIP, RIP-1, receptor (TNFRSF)-interacting serine-threonine kinase 1
Target/Specificity	RIPK1;
Reconstitution & Storage	RIP1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	RIP1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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-alpha-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}

Background

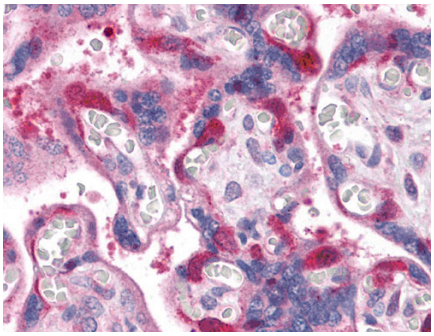
RIP1 Antibody: RIP1 (Receptor Interacting Protein), also known as RIPK1, is a crucial 74 kD adaptor kinase in several of stress-induced signaling pathways and on the crossroad of a cell's decision to live or die. RIP1 contains an N-terminal region with homology to protein kinases, an intermediate domain capable of association with MAPKKK and a C-terminal region containing a death domain motif present in the Fas and TNFR1 intracellular domains. Full length RIP1 is important for signallling to NF-kappa-B, MAPKs and necrosis, whereas caspase-8 generates a C-terminal RIP1 cleavage fragment, promoting TNF-induced apoptosis. It is required for TNFRSF1A-mediated and TLR3-induced NF-kappa-B activation. RIP1-deficient mice fail to thrive, displaying extensive apoptosis in both lymphoid and adipose tissues and dying at 1-3 days of age.

References

Stanger BZ, Leder P, Lee TH, et al. RIP: a novel protein containing a death domain that interacts with Fas/APO-1 (CD95) in yeast and causes cell death. Cell 1995; 81:513-23.
Hsu H, Huang J, Shu HB, et al. TNF-dependent recruitment of the protein kinase RIP to the TNF receptor-1 signaling complex. Immunity 1996; 4:387-96.
Meylan E, Burns K, Hofmann K, et al. RIP1 is an essential mediator of Toll-like receptor 3-induced NF-kappa B activation. Nat. Immunol.; 2004; 5:503-7.
Festjens N, Vanden Bergh T, Cornelis S, et al. RIP1, a kinase on the crossroads of a cell's decision to live or die. Cell Death Differ. 2007;14:400-10.

Images

Immunohistochemistry of RIP1 in human placenta tissue with RIP1 antibody at 10 µg/mL.



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