

# RIPK1 Antibody

Catalog # ASC10976

## Product Information

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<b>Application</b>	WB, IF, E, IHC-P
<b>Primary Accession</b>	<a href="#">Q13546</a>
<b>Other Accession</b>	<a href="#">NP_003795</a> , <a href="#">57242761</a>
<b>Reactivity</b>	Human, Mouse, Rat
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	IgG
<b>Calculated MW</b>	75931
<b>Concentration (mg/ml)</b>	1 mg/mL
<b>Conjugate</b>	Unconjugated
<b>Application Notes</b>	RIPK1 antibody can be used for detection of RIPK1 by Western blot at 1 $\mu$ g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 $\mu$ g/mL. For immunofluorescence start at 20 $\mu$ g/mL.

## Additional Information

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<b>Gene ID</b>	8737
<b>Other Names</b>	Receptor-interacting serine/threonine-protein kinase 1, 2.7.11.1, Cell death protein RIP, Receptor-interacting protein 1, RIP-1, Serine/threonine-protein kinase RIP, RIPK1, RIP, RIP1
<b>Target/Specificity</b>	RIPK1;
<b>Reconstitution &amp; Storage</b>	RIPK1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
<b>Precautions</b>	RIPK1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

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<b>Name</b>	RIPK1 ( <a href="#">HGNC:10019</a> )
<b>Function</b>	Serine-threonine kinase which is a key regulator of TNF- mediated apoptosis, necroptosis and inflammatory pathways (PubMed: <a href="#">17703191</a> , PubMed: <a href="#">24144979</a> , PubMed: <a href="#">31827280</a> , PubMed: <a href="#">31827281</a> , PubMed: <a href="#">32657447</a> , PubMed: <a href="#">35831301</a> ). Exhibits kinase activity-dependent functions that regulate cell death and kinase-independent scaffold functions regulating inflammatory signaling and cell survival (PubMed: <a href="#">11101870</a> , PubMed: <a href="#">19524512</a> , PubMed: <a href="#">19524513</a> , PubMed: <a href="#">29440439</a> , PubMed: <a href="#">30988283</a> ). 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}

## Background

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**RIPK1 Antibody:** RIPK1 (Receptor Interacting Protein) 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. RIPK1 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 RIPK1 is important for signalling to NF-κB, MAPKs and necrosis, whereas caspase-8 generates a C-terminal RIPK1 cleavage fragment, promoting TNF-induced apoptosis. It is required for TNFRSF1A-mediated and TLR3-induced NF-κB activation. RIPK1-deficient mice fail to thrive, displaying extensive apoptosis in both lymphoid and adipose tissues and dying at 1-3 days of age.

## References

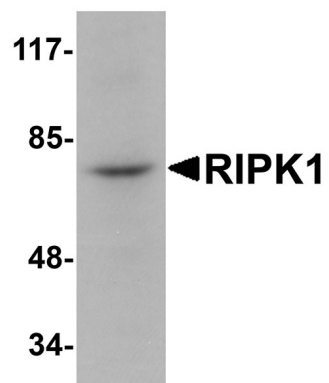
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- Stanger BZ, Leder P, Lee TH, et al. RIP: a novel protein containing a death domain that interacts with Fas/APO-1 (CD95) in yeast and causes cell death. *Cell*1995; 81:513-23.
- Hsu H, Huang J, Shu HB, et al. TNF-dependent recruitment of the protein 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.

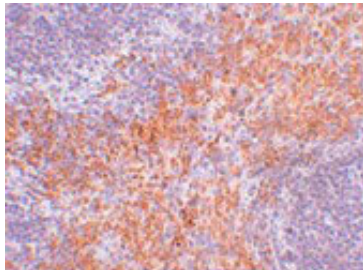
## Images

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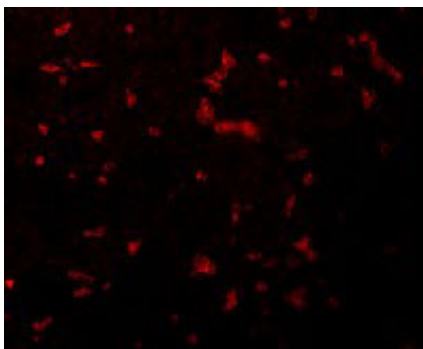
Western blot analysis of RIPK1 in rat kidney tissue lysate



with RIPK1 antibody at 1  $\mu\text{g/mL}$ .



Immunohistochemistry of RIPK1 in mouse kidney tissue with RIPK1 antibody at 2.5  $\mu\text{g/mL}$ .



Immunofluorescence of RIPK1 in Mouse Kidney cells with RIPK1 antibody at 20  $\mu\text{g/mL}$ .

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