

## RIPK1 Protein, Mouse, Recombinant (His)

## General Information

Synonyms:	Receptor-interacting serine/threonine-protein kinase 1; Receptor-interacting protein 1 (RIP-1); Ripk1; Rinp; Rip; Cell death protein RIP
Protein Construction:	1-656 aa
Species:	Mouse
Expression Host:	E. coli
Accession:	Q60855
Molecular Weight:	78.9 kDa (predicted)
AA Sequence:	<p>MQPDMSLDNIKMASSDLLEKTDLDSGGFGKVS L CYHRSHG FVILK K VY T G P N R A E Y N E V L L E E G K M M H R L R H S R V V K L L G I I I E E G N Y S L V M E Y M E K G N L M H V L K T Q I D V P L S L K G R I I V E A I E G M C Y L H D K G V I H K D L K P E N I L V D R D F H I K I A D L G V A S F K T W S K L T K E K D N K Q K E V S S T T K K N N G G T L Y Y M A P E H L N D I N A K P T E K S D V Y S F G I V L W A I F A K K E P Y E N V I C T E Q F V I C I K S G N R P N V E E I L E Y C P R E I I S L M E R C W Q A I P E D R P T F L G I E E E F R P F Y L S H F E E Y V E E D V A S L K K E Y P D Q S P V L Q R M F S L Q H D C V L P P S R S N S E Q P G S L H S S Q G L Q M G P V E E S W F S S S P E Y P Q D E N D R S V Q A K L Q E E A S Y H A F G I F A E K Q T K P Q P R Q N E A Y N R E E E R K R R V S H D P F A Q Q R A R E N I K S A G A R G H S D P S T T S R G I A V Q Q L S W P A T Q T V W N N G L Y N Q H G F G T T G T G V W Y P P N L S Q M Y S T Y K T P V P E T N I P G S T P T M P Y F S G P V A D D L I K Y T I F N S S G I Q I G N H N Y M D V G L N S Q P P N N T C K E E S T S R H Q A I F D N T T S L T D E H L N P I R E N L G R Q W K N C A R K L G F T E S Q I D E I D H D Y E R D G L K E K V Y Q M L Q K W L M R E G T K G A T V G K L A Q A L H Q C C R I D L L N H L I R A S Q S</p>

## QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Tris-based buffer, 50% glycerol

## Preparation and Storage

## Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

## Stability &amp; Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

## Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Serine-threonine kinase which is a key regulator of TNF-mediated apoptosis, necroptosis and inflammatory pathways. Exhibits kinase activity-dependent functions that regulate cell death and kinase-independent scaffold functions regulating inflammatory signaling and cell survival. 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. 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. RIPK1 is required to limit CASP8-dependent TNFR1-induced apoptosis. 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. Inhibits RIPK3-mediated necroptosis via FADD-mediated recruitment of CASP8, which cleaves RIPK1 and limits TNF-induced necroptosis. Required to inhibit apoptosis and necroptosis during embryonic development: acts by preventing the interaction of TRADD with FADD thereby limiting aberrant activation of CASP8. In addition to apoptosis and necroptosis, also involved in inflammatory response by promoting transcriptional production of pro-inflammatory cytokines, such as interleukin-6 (IL6). Phosphorylates RIPK3: RIPK1 and RIPK3 undergo reciprocal auto- and trans-phosphorylation. Phosphorylates DAB2IP at 'Ser-728' in a TNF-alpha-dependent manner, and thereby activates the MAP3K5-JNK apoptotic cascade. Required for ZBP1-induced NF-kappa-B activation in response to DNA damage.

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