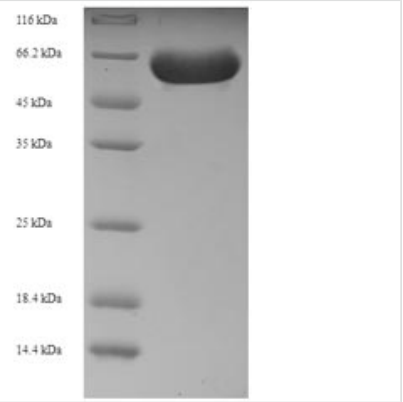
Recombinant Human Receptor-interacting serine/threonine-protein kinase 2 (RIPK2)

Product Code	CSB-EP019736HU
Relevance	Serine/threonine/tyrosine kinase that plays an essential role in modulation of innate and adaptive immune responses. Upon stimulation by bacterial peptidoglycans, NOD1 and NOD2 are activated, oligomerize and recruit RIPK2 through CARD-CARD domains. Contributes to the tyrosine phosphorylation of the guanine exchange factor ARHGEF2 through Src tyrosine kinase leading to NF-kappaB activation by NOD2. Once recruited, RIPK2 autophosphorylates and undergoes 'Lys-63'-linked polyubiquitination by E3 ubiquitin ligases XIAP, BIRC2 and BIRC3. The polyubiquitinated protein mediates the recruitment of MAP3K7/TAK1 to IKBKG/NO and induces 'Lys-63'-linked polyubiquitination of IKBKG/NO and subsequent activation of IKBKB/IKKB. In turn, NF-kappa-B is released from NF-kappa-B inhibitors and translocates into the nucleus where it activates the transcription of hundreds of genes involved in immune response, growth control, or protection against apoptosis. Plays also a role during engagent of the T-cell receptor (TCR) in promoting BCL10 phosphorylation and subsequent NF-kappa-B activation.
Abbreviation	Recombinant Human RIPK2 protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	O43353
Alias	CARD-containing interleukin-1 beta-converting enzyme-associated kinase ;CARD-containing IL-1 beta ICE-kinaseRIP-like-interacting CLARP kinaseReceptor-interacting protein 2 ;RIP-2Tyrosine-protein kinase RIPK2 (EC:2.7.10.2)
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MNGEAICSALPTIPYHKLADLRYLSRGASGTVSSARHADWRVQVAVKHLHIHT PLLDSERKDVLREAEILHKARFSYILPILGICNEPEFLGIVTEYMPNGSLNELLHR KTEYPDVAWPLRFRILHEIALGVNYLHNMTPPLLHHDLKTQNILLDNEFHVKIAD FGLSKWRMMSLSQSRSSKSAPEGGTIIYMPPENYEPGQKSRASIKHDIYSYAVI TWEVLSRKQPFEDVTNPLQIMYSVSQGHRPVINEESLPYDIPHRARMISLIESG WAQNPDERPSFLKCLIELEPVLRTFEEITFLEAVIQLKKTKLQSVSSAIHLCDKK KMELSLNIPVNHGPQEESCGSSQLHENSGSPETSRSLPAPQDNDFLSRKAQD CYFMKLHHCPGNHSWDSTISGSQRAAFCDHKTTPCSSAIINPLSTAGNSERLQ PGIAQQWIQSKREDIVNQMTEACLNQSLDALLSRDLIMKEDYELVSTKPTRTSK VRQLLDTTDIQGEEFAKVIVQKLKDNKQMGLQPYPEILVVSRSPSLNLLQNKSM

Research Area	Immunology
Source	E.coli
Target Names	RIPK2
Expression Region	1-540aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	65.2kDa
Protein Length	Full Length

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Like all recombinant proteins, this Recombinant Human RIPK2 protein was encoded by recombinant DNA. The recombinant DNA was introduced to a plasmid in which the gene of RIPK2 was cloned downstream of a promoter region. When the plasmid was introduced to the cells of E.coli, the E.coli's own protein synthesis pathways would then result in the expression of the RIPK2 protein. And the next step was protein purification. The purity of this recombinant protein is 90%+ determined by SDS-PAGE.

Receptor-interacting serine/threonine kinase 2 (RIPK2), also known as receptor-interacting protein 2 (RIP2), is a signaling molecule downstream of NOD2 and ATG16L1. Recent studies have provided evidence that excessive activation of RIPK2 is involved in the development of experimental and human bowel diseases. RIPK2 is expressed in antigen-presenting cells, such as dendritic cells and macrophages. Recognition of microbe-associated molecular patterns by NOD1, NOD2, and TLRs leads to the interaction between RIPK2 and these innate immune receptors, followed by the release of pro-inflammatory cytokines such as TNF-α, IL-6, and IL-12/23p40 through the activation of nuclear factor kappa B and mitogen-activated protein kinases. Thus, activation of RIPK2 plays a critical role in host defense against microbial infections. Recent experimental and clinical studies have provided evidence that activation of RIPK2 is involved in the development of autoimmune diseases, especially bowel diseases. In addition, the colonic mucosa of patients with bowel diseases exhibits enhanced expression of RIPK2 and associated signaling molecules. Furthermore, the

	blockage of RIPK2 activation ameliorates the development of experimental murine colitis. Thus, activation of RIPK2 underlies bowel diseases immunopathogenesis.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.