

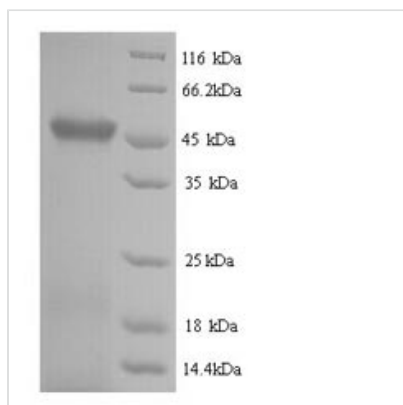


Recombinant Escherichia coli RNA-splicing ligase RtcB (rtcB)

Product Code	CSB-YP341647ENV
Relevance	RNA ligase that mediates the joining of broken tRNA-like st-loop structures in case of tRNA damage. Probably participates to tRNA restriction-repair by ligating broken tRNA-like st-loop structures with 2',3'-cyclic phosphate and 5'-OH ends to form a splice junction with a 2'-OH, 3',5'-phosphodiester, a step that requires GTP . Also acts as a DNA ligase in case of DNA damage by splicing 'dirty' DNA breaks, characterized by 3'-PO ₄ (or cyclic-PO ₄) and 5'-OH ends that cannot be sealed by classical DNA ligases .
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.	P46850
Product Type	Recombinant Protein
Immunogen Species	Escherichia coli (strain K12)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MNYELLTTENAPVKMWTKGVPVEADARQQQLINTAKMPFIFKHIAVMPDVHLGK GSTIGSVIPTKGAIIPAAVGVDIGCGMNALRTALTAEDLPENLAELRQAIETAVPH GRTTGRCKRDKGAWENPPVNVDAKWAELEAGYQWLTQKYPRFLNTNNYKHL GTLGTGNHFIEICLDESQVWIMLHSGSRGIGNAIGTYFIDLAQKEMQETLETLP SRDLAYFMEGTEYFDDYLKAWAWAQLFASLNDRDAMMENVVTALQSITQKTVR QPQTLAMEEINCHHNYVQKEQHFGEEIYVTRKGAVSARAGQYGIIPGSMGAKS FIVRGLGNEESFCSCSHGAGRVMSTRKAKKLFSVEDQIRATAHVECRKDAEVI DEIPMAYKDIDAVMAAQSDLVEVIYTLRQVVCVKG
Lead Time	3-7 business days
Research Area	Others
Source	Yeast
Gene Names	rtcB
Protein Names	Recommended name: RNA-splicing ligase RtcB EC= 6.5.1.-
Expression Region	1-408aa
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	47.2kDa
Protein Description	Full Length



Image



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

Description

The expression region of this recombinant *Escherichia coli* (strain K12) *rtcB* covers amino acids 1-408. This *rtcB* protein is theoretically predicted to have a molecular weight of 47.2 kDa. The *rtcB* protein was expressed in yeast. The *rtcB* gene fragment has been modified by fusing the N-terminal 6xHis tag, providing convenience in detecting and purifying the recombinant *rtcB* protein during the following stages.

Escherichia coli RNA-splicing ligase RtcB is an enzyme involved in RNA repair and tRNA splicing. RtcB participates in the repair of damaged or cleaved RNA molecules. RtcB exhibits 3'-phosphate/5'-OH ligase activity, catalyzing the joining of RNA molecules with a 3'-phosphate end to those with a 5'-hydroxyl end. It plays a role in sealing broken RNA ends, facilitating the restoration of functional RNA structures. RtcB is implicated in the splicing of tRNA molecules. In certain organisms, including bacteria, tRNA precursors undergo splicing to remove introns, and RtcB is involved in the ligation of the exons. Understanding the functions of *Escherichia coli* RNA-splicing ligase RtcB contributes to the broader knowledge of RNA processing, repair mechanisms, and the maintenance of functional RNA molecules within bacterial cells.

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.