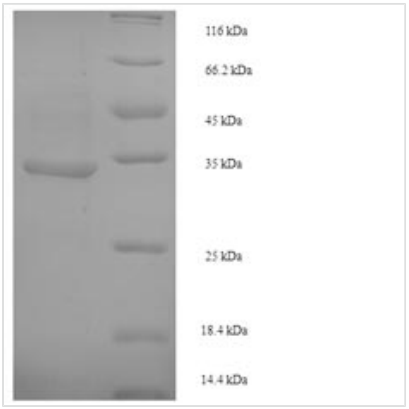
Recombinant Escherichia coli Crossover junction endodeoxyribonuclease RuvC (ruvC)

Product Code	CSB-EP364095ENV
Relevance	Nuclease that resolves Holliday junction intermediates in genetic recombination. Cleaves the cruciform structure in supercoiled DNA by nicking to strands with the same polarity at sites symmetrically opposed at the junction in the homologous arms and leaves a 5'-terminal phosphate and a 3'-terminal hydroxyl group.
Abbreviation	Recombinant E.coli ruvC 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.	P0A814
Alias	Holliday junction nuclease RuvCHolliday junction resolvase RuvC
Product Type	Recombinant Protein
Immunogen Species	Escherichia coli (strain K12)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	AIILGIDPGSRVTGYGVIRQVGRQLSYLGSGCIRTKVDDLPSRLKLIYAGVTEIIT QFQPDYFAIEQVFMAKNADSALKLGQARGVAIVAAVNQELPVFEYAARQVKQT VVGIGSAEKSQVQHMVRTLLKLPANPQADAADALAIAITHCHVSQNAMQMSES RLNLARGRLR
Research Area	Others
Source	E.coli
Target Names	ruvC
Protein Names	Recommended name: Crossover junction endodeoxyribonuclease RuvC EC= 3.1.22.4 Alternative name(s): Holliday junction nuclease RuvC Holliday junction resolvase RuvC
Expression Region	2-173aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	34.6kDa
Protein Length	Full Length of Mature Protein
Image	



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

Description

The recombinant Escherichia coli (strain K12) ruvC was expressed with the amino acid range of 2-173. The theoretical molecular weight of the ruvC protein is 34.6 kDa. Expression of this ruvC protein is conducted in e.coli. Fusion of the N-terminal 6xHis-SUMO tag into the ruvC encoding gene fragment was conducted, allowing for easier detection and purification of the ruvC protein in subsequent stages.

The Escherichia coli crossover junction endodeoxyribonuclease RuvC is a key enzyme involved in the resolution of Holliday junctions during genetic recombination and DNA repair. As part of the RuvABC complex, RuvC works in coordination with RuvA and RuvB to process Holliday junctions formed during DNA recombination events. RuvC acts specifically at the junction point, symmetrically cleaving the DNA strands, leading to the separation and resolution of the crossover structure. This process is crucial for the accurate segregation of genetic material during cell division and the repair of DNA damage. RuvC's activity is tightly regulated and orchestrated within the RuvABC complex, highlighting its importance in maintaining genomic integrity in Escherichia coli. Understanding the molecular mechanisms of RuvC provides insights into the intricate processes of DNA repair and recombination, contributing to the broader knowledge of genome stability and maintenance.

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

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