

RuvC Protein, E.coli (His-SUMO)

Cat. No.:	HY-P71514
Synonyms:	ruvC; b1863; JW1852; Crossover junction endodeoxyribonuclease RuvC; EC 3.1.22.4; Holliday junction nuclease RuvC; Holliday junction resolvase RuvC
Species:	E.coli
Source:	E. coli
Accession:	P0A814 (A2-R173)
Gene ID:	946378
Molecular Weight:	Approximately 34.6 kDa

PROPERTIES

AA Sequence	<pre> A I I L G I D P G S R V T G Y G V I R Q V G R Q L S Y L G S G C I R T K V D D L P S R L K L I Y A G V T E I I T Q F Q P D Y F A I E Q V F M A K N A D S A L K L G Q A R G V A I V A A V N Q E L P V F E Y A A R Q V K Q T V V G I G S A E K S Q V Q H M V R T L L K L P A N P Q A D A A D A L A I A I T H C H V S Q N A M Q M S E S R L N L A R G R L R </pre>
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm sterile filtered PBS, 6% Trehalose, pH 7.4
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>The RuvC protein is an essential component of the RuvA-RuvB-RuvC complex, which plays a crucial role in processing Holliday junctions during genetic recombination and DNA repair. As an endonuclease, RuvC resolves Holliday junction (HJ) intermediates by making single-stranded nicks across the junction at symmetrical positions within the homologous arms. This cleavage results in the generation of a 5'-phosphate and a 3'-hydroxyl group and is dependent on the presence of a central core of homology in the junction. The consensus cleavage sequence for RuvC is 5'-(A/T)TT(C>G/A)-3', with cleavage occurring on the 3'-side of the TT dinucleotide at the point of strand exchange. Notably, the cleavage reactions can be</p>
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uncoupled, requiring the presence of two consensus cleavage sequences. RuvC binds to cruciform DNA in a sequence non-specific manner. In conjunction with RuvA and RuvB, RuvC forms a complex that enhances the rate of strand exchange (branch migration), dissociates the RecA filament, and facilitates cleavage in both orientations at the cruciform junction. The HJ-RuvA-RuvB-RuvC complexes not only resolve Holliday junctions but also undergo branch migration, demonstrating a coupled branch migration/HJ resolution reaction. This comprehensive enzymatic activity of RuvC underscores its pivotal role in the intricate machinery of DNA repair and recombination.

Caution: Product has not been fully validated for medical applications. For research use only.

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