

## ***E. coli* RuvB Protein, functional**

Cat.# 01-009, Size: 20 ug; Cat.# 01-010, Size: 100 ug

### **Background:**

*E. coli* RuvB protein forms a complex with RuvA protein at the late stage of homologous recombination and recombination repair and binds specifically to the Holliday structure which is the intermediate of recombination, allowing the migration of Holliday junction using ATP hydrolysis energy and expands the heteroduplex region.

### **Specifications:**

Product: Full-length recombinant protein, highly purified (95% >)

Form: 50% glycerol, 10 mM Tris-HCl (pH7.5), 2 mM EDTA, 100 mM NaCl, 5 mM mercaptoethanol

Concentration: 1.0 mg/ml (determined by BCA method)

Storage: Ship at 4°C or at -20°C. Spin-down and store at -20°C or -80°C for longer period

### **Applications**

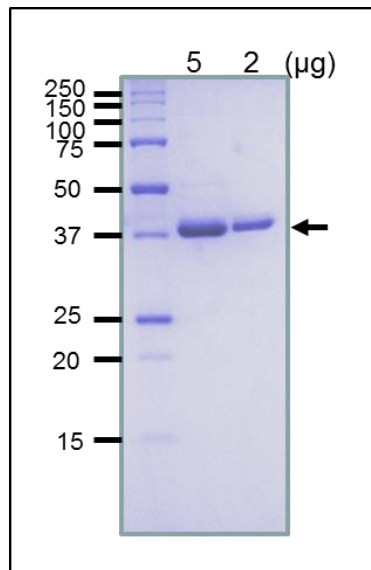
1. Functional studies in vitro; RuvA and RuvB form a complex that promotes Holiday junction ( a recombination intermediatae) branch-migration by using ATP hydrolysis energy (Ref.2).
2. Standard antigen for western blotting and ELISA

**Data Link** UniProtKB/Swiss-Prot [P0A812](#) (RUVB\_ECOLI)

**References:** This product has been used in Ref 2-7.

1. Shinagawa H and Iwasaki H (1996) "Processing the holliday junction in homologous recombination." *Trend Biochem Sci* **21**:107-111 PMID: [8882584](#)
2. Iwasaki H et al Escherichia coli RuvA and RuvB proteins specifically interact with Holliday junctions and promote branch migration. *Genes Dev* **6**:2214-2220 PMID: [1427081](#)
3. Hishida T et al. Role of walker motif A of RuvB protein in promoting branch migration of holliday junctions. Walker motif a mutations affect Atp binding, Atp hydrolyzing, and DNA binding activities of Ruvb. [J Biol Chem.](#) 1999 Sep 3;274(36):25335-42.
4. Han YW et al. A unique beta-hairpin protruding from AAA+ ATPase domain of RuvB motor protein is involved in the interaction with RuvA DNA recognition protein for branch migration of Holliday junctions. [J Biol Chem.](#) 2001 Sep 14;276(37):35024-8. Epub 2001 Jun 26.
5. Hishida T et al. Direct evidence that a conserved arginine in RuvB AAA+ ATPase acts as an allosteric effector for the ATPase activity of the adjacent subunit in a hexamer. [Proc Natl Acad Sci U S A.](#) 2004 Jun 29;101(26):9573-7. Epub 2004 Jun 21.
6. Han YW et al. Direct observation of DNA rotation during branch migration of Holliday junction DNA by Escherichia coli RuvA-RuvB protein complex. [Proc Natl Acad Sci U S A.](#) 2006 Aug 1;103(31):11544-8. Epub 2006 Jul 24

7. Mazina OM et al. Polarity and bypass of DNA heterology during branch migration of Holliday junctions by human RAD54, BLM, and RECQ1 proteins. [J Biol Chem](#). 2012 Apr 6;287(15):11820-32.



**Figure.** SDS-PAGE analysis of the purified RuvB protein. 37 kDa

**Related Products:**

01-007 *E.coli* RuvA protein    01-011 *E.coli* RuvC protein    61-005 anti-RuvA antibody, rabbit polyclonal  
61-007 anti-RuvB antibody, rabbit polyclonal    61-009 anti-RuvC antibody, rabbit polyclonal