
Product Name **Thermus thermophilus RecA (Tth RecA), Recombinant**

Cat # EG-183

Overview RecA from *Thermus thermophilus* HB8 (Tth RecA) is a thermostable recombinase that plays a central role in homologous recombination, DNA repair, and the maintenance of genome integrity in this thermophilic bacterium. Tth RecA catalyzes ATP-dependent strand exchange between homologous DNA molecules, promotes DNA pairing, and facilitates the repair of double-stranded breaks. Its exceptional thermal stability and robust activity at elevated temperatures make it an ideal tool for in vitro recombination and strand exchange reactions under thermophilic conditions.

Source Recombinant protein expressed in *E. coli* carrying the *Thermus thermophilus* HB8 *recA* gene

Molecular Weight

- ~38 kDa (monomer)

Key Features

- Thermostable: active at temperatures up to 70–80 °C
- Catalyzes ATP-dependent homologous DNA strand exchange
- Promotes DNA pairing and repair of double-stranded breaks
- Facilitates in vitro recombination and genetic engineering at high temperature

Applications Functional homolog of *E. coli* RecA, but adapted for thermophilic environments

- Homologous recombination and strand exchange assays at elevated temperatures
- In vitro DNA repair and recombination studies
- Thermostable genetic engineering and molecular biology workflows

Quality Control Model system for studying recombinase function in thermophiles

- Purity >95% by SDS-PAGE

Formulation Functional validation in ATP-dependent DNA strand exchange assays
20 mM Tris-HCl, 100 mM NaCl, 1 mM DTT, 10% glycerol, pH 7.5

Storage -80 °C (long-term); avoid repeated freeze-thaw cycles

- Yokoyama, A., et al. "Functional and structural characterization of RecA from *Thermus thermophilus* HB8." *J Biol Chem.* 2002; 277(11): 9963–9970.

References Kim, J.I., et al. "Crystal structure of RecA from *Thermus thermophilus* HB8 and its functional implications." *Biochem Biophys Res Commun.* 2002; 298(3): 385–391.

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Applications	Functional homolog of <i>E. coli</i> RecA, but adapted for thermophilic environments • Homologous recombination and strand exchange assays at elevated temperatures • In vitro DNA repair and recombination studies • Thermostable genetic engineering and molecular biology workflows Model system for studying recombinase function in thermophiles