



Tte MutL Protein

Manual

Catalog #	3722	3724
Package Size	20 µg	400 µg
Concentration	200 µg/mL	200 µg/mL
Volume	100 µL	2 mL



Important!

-20°C Storage Required

- * Immediately inspect packages
- * Freeze upon receipt



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Intact Genomics, Inc.

Tte MutL Protein

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Description:

Tte MutL is a thermostable accessory protein associated with DNA helicases from *Thermoanaerobacter tengcongensis* (*Tte*). It is involved in prokaryotic DNA mismatch repair and is a known interaction partner of Tte UvrD helicase¹.

Tte MutL possesses ATPase activity, and ATP hydrolysis serves as an indicator of enzyme activity. It may also enhance helicase-dependent amplification (HDA) under certain reaction conditions². Its effects on helicase activity are typically evaluated in the presence of Tte UvrD helicase.

Intact Genomics Tte MutL is suitable for studies of DNA mismatch repair, MutL–UvrD interactions, ATPase activity, helicase regulation, and the development or optimization of helicase-dependent and other isothermal DNA amplification systems.

Applications:

- Development of isothermal DNA amplification systems including Helicase-dependent amplification (HDA)
- DNA helicase and strand-unwinding assays
- Studies of prokaryotic DNA mismatch repair
- Investigation of Tte MutL–Tte UvrD protein interactions

Benefits:

- Supports research and development of thermostable nucleic acid amplification technologies
- May improve HDA performance under optimized reaction conditions
- Useful for studying DNA repair, helicase activity, and protein–protein interactions
- ATPase activity provides a measurable indicator of enzyme function
- Suitable for research and diagnostic assay development

Source:

Recombinant MutL expressed from a plasmid carrying a thermostable *Thermoanaerobacter tengcongensis* MutL gene.

Specifications:

- Purified recombinant Tte MutL Protein
- Molecular weight: 67 kDa
- Free of detectable endonuclease activity

Product Components and Storage Temperature:

IG Cat #	Package Size	Component Name	IG Part #	Amount	Concentration	Storage
3722	20 µg	Tte MutL Protein	P241286	1 × 100 µL	200 µg/mL	-20 °C
		10X Helicase Reaction Buffer	P241266	1 × 1 mL	10X	-20 °C
		10 mM Adenosine Triphosphate (ATP)	P241270	1 × 50 µL	10 mM	-20 °C
3724	400 µg	Tte MutL Protein	P241288	2 × 1 mL	200 µg/mL	-20 °C
		10X Helicase Reaction Buffer	P241266	1 × 1 mL	10X	-20 °C
		10 mM Adenosine triphosphate (ATP)	P241274	1 × 200 µL	10 mM	-20 °C

Quality Control:

Nuclease Activity: DNA nuclease activity is evaluated by comparing the integrity of DNA incubated overnight with a concentrated enzyme sample to that of a no-enzyme control. No detectable DNA degradation should be observed.

Enzyme Activity: At a concentration of 400 nM, the enzyme passes an ATPase assay and demonstrates activity comparable to that of a standard Tte MutL batch.

Protocol for DNA Helicase Activity:

NOTE: this procedure requires another IG® enzyme, Tte UvrD or Super-Tte UvrD

- Set up the reaction according to the table.

Reagent	µL of sample
Template dsDNA	X (up to 1 µg)
H ₂ O-Nuclease-Free	14-X
10x Helicase Buffer	2
10 mM ATP	2
Tte MutL Protein	1
Tte UvrD or igSuper™ Tte UvrD (not included)	1

Total Volume: 20 µL

- Incubate the reaction mixture at 65 °C for 20 minutes. The incubation time and temperature may be adjusted for different applications. Typical conditions range from 42–68 °C for 10–60 minutes.

Note : ATP hydrolysis can limit helicase activity at higher temperatures.

- To inactivate the enzyme, incubate the reaction at 80 °C for 15 minutes.

References:

1. Ban, C. & Yang, W. Crystal Structure and ATPase Activity of MutL: Implications for DNA Repair and Mutagenesis. *Cell* 95, 541–552 (1998).
2. An, L. *et al.* Characterization of a Thermostable UvrD Helicase and Its Participation in Helicase-dependent Amplification*. *Journal of Biological Chemistry* 280, 28952–28958 (2005).

Related Products:

- IG® Tte UvrD Helicase (Cat.# 3711, 3713)
- igSuper™ Tte UvrD Helicase (Cat.# 3717, 3719)
- IG® RPA Master Mix (Cat.# 3545, 3547)
- IG® RPA Kit v2 (Cat.# 3533, 3534)
- T4 UvsX DNA Recombinase (Cat.# 3562, 3565)
- T4 UvsY Protein (Cat.# 3572, 3575)

Ordering Information:

- Order online within the USA. Place orders on **www.intactgenomics.com** using our secure Shopping Cart.
- Order by email, phone, or fax.
Email: **sales@intactgenomics.com**
Phone: (314) 942-3655 | Toll-free : 855-835-7172 | Fax: (314) 942-3656
- Order via our distributors.



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Intact Genomics, Inc.

11840 Westline Industrial Drive, Suite 120,
St. Louis, MO. 63146, USA

Phone: (314) 942-3655 | **Toll-free :** 855-835-7172 | **Fax:** (314) 942-3656

Email: sales@intactgenomics.com | ig@intactgenomics.com

Website: www.intactgenomics.com

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