

# T7 Endonuclease I

**Catalog:** RK20541

**Size:** 250 U / 1,250 U

**Concentration:** 10,000 U/mL

**Components:**

T7 Endonuclease I (10,000 U/mL)	RM20525
10X ABuffer B	RM20126

## Product Description

T7 Endonuclease I (T7 Endo I) recognizes and cleaves non-perfectly matched DNA, cruciform DNA structures, Holliday structures or junctions, heteroduplex DNA and more slowly, nicked double-stranded DNA. The cleavage site is at the first, second or third phosphodiester bond that is 5' to the mismatch. The protein is the product of T7 gene 3.

It is applicable to:

- Recognition of mismatched DNA.
- Resolve four-way junction or branched DNA.
- Detection or cleavage of heteroduplex and nicked DNA.
- Random cleavage of linear DNA for shotgun cloning.

**Product Source:**

An *E. coli* strain that carries T7 Endonuclease I (T7 Endo I).

**Unit Definition:**

One unit is defined as the amount of enzyme required to convert > 90% of 1 µg of supercoiled cruciform pUC(AT)\* to > 90% linear form in a total reaction volume of 50 µL in 1 hour at 37 °C.

*\*pUC(AT) is derived from pUC19 with a modification of the polylinker between the EcoRI site and the PstI site:*

**Reaction Conditions:**

1X ABuffer B, Incubate at 37 °C.

**1X ABuffer B:**

10 mM Tris-HCl, 50 mM NaCl, 10 mM MgCl<sub>2</sub>, 1 mM DTT, pH 7.9 @ 25 °C

**Storage Conditions:**

20 mM Tris-HCl, 200 mM NaCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 0.15% Triton X-100, pH 7.5 @ 25 °C

**Heat Inactivation:** No

**Notes**

- T7 Endonuclease I is a structure-selective enzyme. It acts on a variety of DNA substrates with different specific activities. It is important to control the amount of enzyme and the reaction time used for cleavage of a particular substrate.
- Temperatures above 42 °C cause an increase in nonspecific nuclease activity and should be avoided.
- This enzyme is not recommended to be used at 55 °C, as the activity is decreased.
- pUC(AT) is derived from pUC19 with a modification of the polylinker between the EcoRI site and the PstI site.

**QC Process:**

- ◆ Purity is above 95% detected by SDS-PAGE.
- ◆ Host genomic DNA is no residual detected by PCR.