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 $MgCl_2$,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

Storage Temperature: -20°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.