

PRODUCT INFORMATION

TaiI (MaeII, *see* Note)

#ER1142 2000 U

Lot: ____ **Expiry Date:** __

5'... **A C G T**↓...3'

3'...↑**T G C A** ...5'

Note. TaiI - neoschizomer of MaeII, produces DNA fragments that have a 4-base 3'-extension.

Concentration: 10 U/μL
Source: *Thermus aquaticus* Cc1-331
Supplied with: 1 mL of 10X Buffer R
1 mL of 10X Buffer Tango

Store at -20°C



BSA included

www.thermoscientific.com/onebio

RECOMMENDATIONS

1X Buffer R (for 100% TaiI digestion)

10 mM Tris-HCl (pH 8.5), 10 mM MgCl₂, 100 mM KCl, 0.1 mg/mL BSA.

Incubation temperature

65°C*.

Unit Definition

One unit is defined as the amount of TaiI required to digest 1 μg of lambda DNA in 1 hour at 65°C in 50 μL of recommended reaction buffer.

Dilution

Dilute with Dilution Buffer (#B19): 10 mM Tris-HCl (pH 7.4 at 25°C), 100 mM KCl, 1 mM EDTA, 1 mM DTT, 0.2 mg/mL BSA and 50% glycerol.

Double Digests

Thermo Scientific Tango Buffer is provided to simplify buffer selection for double digests. 98% of Thermo Scientific restriction enzymes are active in a 1X or 2X concentration of Tango™ Buffer. Please refer to www.thermoscientific.com/doubledigest to choose the best buffer for your experiments.

1X Tango Buffer: 33 mM Tris-acetate (pH 7.9 at 37°C), 10 mM magnesium acetate, 66 mM potassium acetate, 0.1 mg/mL BSA.

* Incubation at 37°C results in less than 10% activity.

Storage Buffer

Tail is supplied in: 10 mM Tris-HCl (pH 7.4 at 25°C), 100 mM KCl, 1 mM EDTA, 1 mM DTT, 0.2 mg/mL BSA and 50% glycerol.

Recommended Protocol for Digestion

- Add:

| | |
|---------------------|----------|
| nuclease-free water | 16 µL |
| 10X Buffer R | 2 µL |
| DNA (0.5-1 µg/µL) | 1 µL |
| Tail | 0.5-2 µL |
- Mix gently and spin down for a few seconds.
- Incubate at 65°C for 1-16 hours.

The digestion reaction may be scaled either up or down.

Recommended Protocol for Digestion of PCR Products Directly after Amplification

- Add:

| | |
|----------------------|----------------------------|
| PCR reaction mixture | 10 µL (~0.1-0.5 µg of DNA) |
| nuclease-free water | 18 µL |
| 10X Buffer R | 2 µL |
| Tail | 1-2 µL |
- Mix gently and spin down for a few seconds.
- Incubate at 65°C for 1-16 hours.

Thermal Inactivation

Tail is not inactivated by incubation at 80°C for 20 min.

Inactivation Procedure

- To prepare the digested DNA for electrophoresis:
 - stop the digestion reaction by adding 0.5 M EDTA, pH 8.0 (#R1021), to achieve a 20 mM final concentration. Mix thoroughly, add an electrophoresis loading dye and load onto gel.
- To prepare DNA suitable for further enzymatic reactions:
 - extract with phenol/chloroform, precipitate with ethanol or isopropanol, wash the pellet with 75% cold ethanol and air-dry;
 - dissolve DNA in either nuclease-free water, TE buffer, or a buffer suitable for further applications;
 - check the DNA concentration in the solution.

For **ENZYME PROPERTIES** and **CERTIFICATE OF ANALYSIS**
see back page

ENZYME PROPERTIES

Enzyme Activity in Thermo Scientific REase Buffers, %

| B | G | O | R | Tango | 2X Tango |
|--------|--------|-------|-----|-------|----------|
| 50-100 | 50-100 | 20-50 | 100 | 100 | 50-100 |

Methylation Effects on Digestion

Dam: never overlaps – no effect.

Dcm: never overlaps – no effect.

CpG: completely overlaps – blocked.

EcoKI: may overlap – effect not determined.

EcoBI: may overlap – effect not determined.

Stability during Prolonged Incubation

A minimum of 0.3 units of the enzyme is required for complete digestion of 1 µg of lambda DNA in 16 hours at 65°C.

Compatible Ends

AatII

Number of Recognition Sites in DNA

| λ | ΦX174 | pBR322 | pUC57 | pUC18/19 | pTZ19R/U | M13mp18/19 |
|-----|-------|--------|-------|----------|----------|------------|
| 143 | 19 | 10 | 5 | 5 | 8 | 22 |

CERTIFICATE OF ANALYSIS

Overdigestion Assay

No detectable change in the specific fragmentation pattern is observed after a 160-fold overdigestion with Tail (10 U/µg lambda DNA x 16 hours).

Ligation and Recleavage (L/R) Assay

The ligation and recleavage assay was replaced with LO test after validating experiments showed LO test ability to trace nuclease and phosphatase activities with sensitivity that is higher than L/R by a factor of 100.

Labeled Oligonucleotide (LO) Assay

No detectable degradation of single-stranded or double-stranded labeled oligonucleotides occurred during incubation with 10 units of Tail for 4 hours.

Quality authorized by:



Jurgita Zilinskiene

PRODUCT USE LIMITATION

This product is developed, designed and sold exclusively *for research purposes and in vitro use only*. The product was not tested for use in diagnostics or for drug development, nor is it suitable for administration to humans or animals.

Please refer to www.thermoscientific.com/onebio for Material Safety Data Sheet of the product.

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