

## PRODUCT INFORMATION

# TasI (Tsp509I)

**#ER1352**      5000 U

**Lot:** \_\_\_\_      **Expiry Date:** \_\_

5'... ↓**A A T T** ...3'  
3'... **T T A A**↑...5'

Concentration:      10 U/μL  
Source:              *Thermus aquaticus* Vn4-211  
Supplied with:      2 x 1 mL of 10X Buffer B  
                             1 mL of 10X Buffer Tango

**Store at -20°C**



In total 4 vials.

BSA included

[www.thermoscientific.com/onebio](http://www.thermoscientific.com/onebio)

## RECOMMENDATIONS

**1X Buffer B** (for 100% TasI digestion)

10 mM Tris-HCl (pH 7.5), 10 mM MgCl<sub>2</sub>, 0.1 mg/mL BSA.

**Incubation temperature**

65°C\*.

**Unit Definition**

One unit is defined as the amount of TasI 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, 100 mM KCl, 1 mM EDTA, 1 mM DTT, 0.2 mg/mL BSA and 50% glycerol (pH 7.4 at 25°C).

**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 the Molecular Biology Tools Product Guide or go to [www.thermoscientific.com/doubledigest](http://www.thermoscientific.com/doubledigest) to choose the best buffer for your experiments.

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

\* Incubate under paraffin oil in a capped vial. Incubation at 37°C results in less than 10% activity.

## Storage Buffer

TasI is supplied in: 10 mM Tris-HCl (pH 7.5 at 25°C), 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 0.2 mg/mL BSA and 50% glycerol.

## Recommended Protocol for Digestion

- Add:

nuclease-free water	16 $\mu$ L
10X Buffer B	2 $\mu$ L
DNA (0.5-1 $\mu$ g/ $\mu$ L)	1 $\mu$ L
TasI	0.5-2 $\mu$ L*
- Mix gently and spin down for a few seconds.
- Incubate under paraffin oil in a capped vial 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 $\mu$ L (~0.1-0.5 $\mu$ g of DNA)
nuclease-free water	18 $\mu$ L
10X Buffer B	2 $\mu$ L
TasI	1-2 $\mu$ L*
- Mix gently and spin down for a few seconds.
- Incubate under paraffin oil in a capped vial at 65°C for 1-16 hours\*.

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\* See Overdigestion Assay on back page.

## Thermal Inactivation

TasI 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
100	50-100	20-50	0-20	20-50	0-20

### Methylation Effects on Digestion

Dam: never overlaps – no effect.

Dcm: never overlaps – no effect.

CpG: never overlaps – no effect.

EcoKI: never overlaps – no effect.

EcoBI: may overlap – blocked.

### 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

EcoRI, MnlI, XapI

### Number of Recognition Sites in DNA

λ	ΦX174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
189	25	8	7	7	10	64

## CERTIFICATE OF ANALYSIS

### Overdigestion Assay

No detectable change in the specific fragmentation pattern is observed after a 80-fold overdigestion with TsaI (5 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 TsaI 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](http://www.thermoscientific.com/onebio) for Material Safety Data Sheet of the product.

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