

**PRODUCT INFORMATION****XbaI****#ER0681** 1500 U**Lot:** \_\_\_\_\_ **Expiry Date:** \_\_\_\_\_

5'...T↓C T A G A...3'

3'...A G A T C↑T...5'

Concentration: 10 U/µL

Source: *Xanthomonas badrii*

Supplied with: 1 mL of 10X Buffer Tango

**Store at -20°C**| ||  
67

In total 2 vials.

BSA included

[www.thermoscientific.com/onebio](http://www.thermoscientific.com/onebio)**RECOMMENDATIONS****1X Thermo Scientific Tango Buffer** (for 100% XbaI digestion)

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

**Incubation temperature**

37°C.

**Unit Definition**One unit is defined as the amount of XbaI required to digest 1 µg of lambda DNA *dam*<sup>-</sup>-SmaI fragments in 1 hour at 37°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**Tango<sup>™</sup> Buffer is provided to simplify buffer selection for double digests. 98% of Fermentas restriction enzymes are active in a 1X or 2X concentration of Tango<sup>™</sup> Buffer. Please refer to the Fermentas Catalog or go to [www.thermoscientific.com/doubledigest](http://www.thermoscientific.com/doubledigest) to choose the best buffer for your experiments.**Storage Buffer**

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

Rev.13

## Recommended Protocol for Digestion

- Add:

nuclease-free water	16 $\mu$ L
10X Buffer Tango	2 $\mu$ L
DNA (0.5-1 $\mu$ g/ $\mu$ L)	1 $\mu$ L
XbaI	0.5-2 $\mu$ L*
- Mix gently and spin down for a few seconds.
- Incubate at 37°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 Tango	2 $\mu$ L
XbaI	1-2 $\mu$ L*
- Mix gently and spin down for a few seconds.
- Incubate at 37°C for 1-16 hours.

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\* This volume of the enzyme is recommended for preparations of standard concentrations (10 U/ $\mu$ L), whereas HC enzymes (50 U/ $\mu$ L) should be diluted with Dilution Buffer to obtain 10 U/ $\mu$ L concentration.

### Thermal Inactivation

XbaI is inactivated by incubation at 65°C for 20 min.

## ENZYME PROPERTIES

### Enzyme Activity in Thermo Scientific REase Buffers, %

B	G	O	R	Tango	2X Tango
50-100	50-100	20-50	0-20	100	50-100

### Methylation Effects on Digestion

Dam: may overlap – blocked.

Dcm: never overlaps – no effect.

CpG: never overlaps – no effect.

EcoKI: never overlaps – no effect.

EcoBI: never overlaps – no effect.

### Stability during Prolonged Incubation

A minimum of 0.1 units of the enzyme is required for complete digestion of 1  $\mu$ g of lambda DNA in 16 hours at 37°C.

### Digestion of Agarose-embedded DNA

A minimum of 5 units of the enzyme is required for complete digestion of 1  $\mu$ g of agarose-embedded lambda DNA in 16 hours.

### Compatible Ends

BpuI, Eco130I, NheI, XmaI

### Number of Recognition Sites in DNA

$\lambda$	$\Phi$ X174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
1	0	0	1	1	1	1

### Note

XbaI is blocked by overlapping *dam* methylation. To avoid *dam* methylation, use a *dam*<sup>-</sup>, *dcm*<sup>-</sup> strain such as GM2163 (#M0099).

# CERTIFICATE OF ANALYSIS

## Overdigestion Assay

No detectable change in the specific fragmentation pattern is observed after a 160-fold overdigestion with XbaI (10 U/μg lambda DNA *dam*<sup>-</sup> × 16 hours).

## Ligation and Recleavage (L/R) Assay

The ligation and reclavage 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 XbaI for 4 hours.

## Blue/White (B/W) Cloning Assay

The B/W assay was replaced with LO test after validating experiments showed LO test ability to detect nuclease and phosphatase activities with sensitivity that equals to that of B/W test.

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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