

**PRODUCT INFORMATION**

# BpiI (BbsI)

**#ER1011** 200 U

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

5'...**G A A G A C (N)**<sub>2</sub>↓...3'  
3'...**C T T C T G (N)**<sub>6</sub>↑...5'

Concentration: 10 U/μL  
Source: *Bacillus pumillus* Sw 4-3  
Supplied with: 1 mL of 10X Buffer G  
1 mL of 10X Buffer Tango

**Store at -20°C**



BSA included

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

## RECOMMENDATIONS

### 1X Buffer G (for 100% BpiI digestion)

10 mM Tris-HCl (pH 7.5), 10 mM MgCl<sub>2</sub>, 50 mM NaCl, 0.1 mg/mL BSA.

### Incubation temperature

37°C.

### Unit Definition

One unit is defined as the amount of BpiI required to digest 1 μg of lambda DNA 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

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](http://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.

## Storage Buffer

Bpil 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 G                2 µL  
DNA (0.5-1 µg/µL)        1 µL  
Bpil                            0.5-2 µL
- 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 µL (~0.1-0.5 µg of DNA)  
nuclease-free water      18 µL  
10X Buffer G                2 µL  
Bpil                            1-2 µL
- Mix gently and spin down for a few seconds.
- Incubate at 37°C for 1-16 hours.

## Thermal Inactivation

Bpil 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
20-50	100	50-100	50-100	50-100	50-100

## Methylation Effects on Digestion

Dam: never overlaps – no effect.  
Dcm: never overlaps – no effect.  
CpG: may overlap – no effect.  
EcoKI: never overlaps – no effect.  
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 37°C.

## Digestion of Agarose-embedded DNA

A minimum of 5 units of enzyme is required for complete digestion of 1 µg of agarose-embedded lambda DNA in 16 hours.

## Number of Recognition Sites in DNA

λ	ΦX174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
24	3	3	0	0	0	0

For **CERTIFICATE OF ANALYSIS** see back page

# **CERTIFICATE OF ANALYSIS**

## **Overdigestion Assay**

No detectable change in the specific fragmentation pattern is observed after a 160-fold overdigestion with BpiI (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 BpiI 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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