Thermo SCIENTIFIC

PRODUCT INFORMATION

BseMII (BspCNI)

#ER1401 100 U

Lot: ___ Expiry Date: _

5'...**C T C A G (N)$_{10}$**↓...3'
3'...**G A G T C (N)$_{8}$**↑...5'

Concentration: 1 U/µL
Supplied with: 1 mL of 10X Buffer Tango
0.1 mL of 50X SAM (0.5 mM)

Store at -20°C

In total 3 vials. BSA included

www.thermoscientific.com/onebio

RECOMMENDATIONS

[1X Thermo Scientific Tango Buffer] + SAM (for 100% BseMII digestion)

[33 mM Tris-acetate (pH 7.9), 10 mM magnesium acetate, 66 mM potassium acetate, 0.1 mg/mL BSA] + 0.01 mM S-adenosylmethionine (SAM).

Incubation temperature

55°C*.

Unit Definition

One unit is defined as the amount of BseMII required to digest 1 µg of lambda DNA in 1 hour at 55°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™ Buffer provided simplifies buffer selection for double digests. 98% of Thermo Scientific restriction enzymes are active in a 1X or 2X concentration of Tango Buffer. Please go to www.thermoscientific.com/doubledigest to choose the best buffer for your experiments.

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* Incubation at 37°C results in 30% activity.

Storage Buffer

BseMII 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.

- Add:

Water, nuclease-free	16 µL
10X Buffer Tango	2 µL
DNA (0.5-1 µg/µL)	1 µL
50X SAM	0.4 µL
BseMII	0.5-2 µL

- Mix gently and spin down for a few seconds.
- Incubate at 55°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 Tango	2 µL	
50X SAM	0.6 µL	
BseMII	1-2 µL	

- Mix gently and spin down for a few seconds.
- Incubate at 55°C for 1-16 hours.

Thermal Inactivation

BseMII is inactivated by incubation at 80°C for 20 min.

ENZYME PROPERTIES

Enzyme Activity in Thermo Scientific REase Buffers, %

B_{+SAM}	G_{+SAM}	O_{+SAM}	R_{+SAM}	$Tango_{+SAM}$	$2X\ Tango_{+SAM}$
50-100	50-100	50-100	50-100	**100**	50-100

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: never overlaps – no effect.

Stability during Prolonged Incubation

A minimum of 0.5 units of the enzyme is required for complete digestion of 1 µg of lambda DNA in 16 hours at 55°C.

Number of Recognition Sites in DNA

λ	ΦX174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
80	10	7	5	5	4	23

Note

Requires S-adenosylmethionine for activity. Sinefungin can replace SAM in the restriction reaction. In this case DNA is not methylated and more than 95% of the ligated BseMII fragments can be recut by this enzyme.

For **CERTIFICATE OF ANALYSIS** *see* back page

CERTIFICATE OF ANALYSIS

Overdigestion Assay

No detectable change in the specific fragmentation pattern is observed after a 64-fold overdigestion with BseMII (4 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 5 units of BseMII 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.