

PRODUCT INFORMATION

Esp3I (BsmBI)

#ER0451 200 U

Lot: _____ Expiry Date: _

5'...C G T C T C (N)₁↓...3'

3'...G C A G A G (N)₅↑...5'

Concentration: 10 U/μL

Source: *E.coli* that carries the cloned *esp3IR* gene from *Hafnia alvei* RFL3

Supplied with: 1 mL of 10X Buffer Tango

Store at -20°C



BSA included

www.thermoscientific.com/onebio

RECOMMENDATIONS

[1X Thermo Scientific Tango Buffer]+DTT* (for 100% Esp3I digestion)

[33 mM Tris-acetate (pH 7.9), 10 mM magnesium acetate, 66 mM potassium acetate, 0.1 mg/mL BSA]+1.0 mM DTT.

Incubation temperature

37°C.

Unit Definition

One unit is defined as the amount of Esp3I 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

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.

* Esp3I is sensitive to DTT. Freshly made DTT should be added to the reaction buffer.

Rev.14

Storage Buffer

Esp3I is supplied in: 10 mM potassium phosphate (pH 7.4 at 25°C), 100 mM KCl, 1 mM EDTA, 7 mM 2-mercaptoethanol, 0.5 mg/mL BSA and 50% (v/v) glycerol.

Recommended Protocol for Digestion

- Add:

nuclease-free water	16 μ L
10X Buffer Tango	2 μ L
DNA (0.5-1 μ g/ μ L)	1 μ L
DTT (20 mM)	1 μ L
Esp3I	0.5-2 μ 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 μ L (~0.1-0.5 μ g of DNA)
nuclease-free water	18 μ L
10X Buffer Tango	2 μ L
DTT (20 mM)	1.5 μ L
Esp3I	1-2 μ L
- Mix gently and spin down for a few seconds.
- Incubate at 37°C for 1-16 hours.

Thermal Inactivation

Esp3I is inactivated by incubation at 65°C for 20 min.

ENZYME PROPERTIES

Enzyme Activity in Thermo Scientific REase Buffers, %

B _{+DTT}	G _{+DTT}	O _{+DTT}	R _{+DTT}	Tango _{+DTT}	2X Tango _{+DTT}
100	20-50	0-20	0-20	100	0-20

Methylation Effects on Digestion

Dam: never overlaps – no effect.
Dcm: never overlaps – no effect.
CpG: completely overlaps – blocked.
EcoKI: never overlaps – no effect.
EcoBI: may overlap – effect not determined.

Stability during Prolonged Incubation

A minimum of 0.2 units of the enzyme is required for complete digestion of 1 μ g of lambda DNA in 16 hours at 37°C.

Digestion of Agarose-embedded DNA

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

Number of Recognition Sites in DNA

λ	ΦX174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
14	0	1	2	2	0	1

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 Esp3I (10 U/ μ g lambda DNA \times 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 Esp3I 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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