

## PRODUCT INFORMATION

# Lsp1109I (BbvI)

**#ER2071**      200 U

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

5'...**G C A G C(N)<sub>8</sub>** ↓...3'

3'...**C G T C G(N)<sub>12</sub>**↑...5'

Concentration:      5 U/μL

Supplied with:      1 mL of 10X Buffer Lsp1109I

1 mL of 10X Buffer Tango

**Store at -20°C**



BSA included

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

## RECOMMENDATIONS

**1X Buffer Lsp1109I** (for 100% Lsp1109I digestion)

10 mM Tris-HCl (pH 8.0), 5mM MgCl<sub>2</sub>, 100 mM KCl,  
0.02% Triton X-100 and 0.1 mg/mL BSA.

**Incubation temperature**

37°C.

**Unit Definition**

One unit is defined as the amount of Lsp1109I required to digest 1 μg of pBR322 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**

Please refer to [www.thermoscientific.com/doubledigest](http://www.thermoscientific.com/doubledigest) to choose the best buffer for your experiments.

**Storage Buffer**

Lsp1109I 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.

## Recommended Protocol for Digestion

- Add:

nuclease-free water	16 $\mu$ L
10X Buffer Lsp1109I	2 $\mu$ L
DNA (0.5-1 $\mu$ g/ $\mu$ L)	1 $\mu$ L
Lsp1109I	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 Lsp1109I	2 $\mu$ L
Lsp1109I	1-2 $\mu$ L*
- Mix gently and spin down for a few seconds.
- Incubate at 37°C for 1-16 hours\*.

\* See Star Activity.

## Thermal Inactivation

Lsp1109I is inactivated by incubation at 65°C for 20 min.

## ENZYME PROPERTIES

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

Lsp1109I	B	G	O	R	Tango	2X Tango
100	0-20	20-50**	50-100**	100**	20-50**	20-50**

\*\*Star activity appears at a greater than 5-fold overdigestion (5 u x 1 h).

### Star Activity

A large excess of the enzyme (10 u/ $\mu$ g DNA x 1 hour) may result in star activity.

### 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  $\mu$ g of pBR322 in 16 hours at 37°C.

### Number of Recognition Sites in DNA

$\lambda$	$\Phi$ X174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
199	14	21	12	12	12	10

### Note

Lsp1109I may remain associated with the cleaved DNA. This may cause DNA band shifting during electrophoresis. To avoid atypical DNA band patterns, use the 6X DNA Loading Dye&SDS Solution (#R1151) for sample preparation or heat the digested DNA in the presence of SDS prior to electrophoresis.

For **CERTIFICATE OF ANALYSIS** see back page

# CERTIFICATE OF ANALYSIS

## Overdigestion Assay

No detectable change in the specific fragmentation pattern is observed after a 5-fold overdigestion with Lsp1109I (5 U/ $\mu$ g pBR322 DNA x 1 hour) (*see* Star Activity).

## 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 Lsp1109I 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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