

# BsmBI



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R0580S 012120814081

**R0580S**

**200 units**    **Lot: 0121208**    **Exp: 8/14**  
**10,000 U/ml**    **Store at -20°C**

#### Recognition Site:

5'... CGTCTC (N)<sub>1</sub>▼... 3'  
3'... GCAGAG (N)<sub>5</sub>▲... 5'

**Source:** An *E. coli* strain that carries the cloned BsmBI gene from *Bacillus stearothermophilus* B61 (Z. Chen)

Supplied in: 200 mM NaCl, 10 mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1 mM DTT, 200 µg/ml BSA and 50% glycerol.

#### Reagents Supplied with Enzyme:

10X NEBuffer 3.

#### Reaction Conditions: 1X NEBuffer 3.

**Incubate at 55°C.**

#### 1X NEBuffer 3:

100 mM NaCl  
50 mM Tris-HCl  
10 mM MgCl<sub>2</sub>  
1 mM DTT  
pH 7.9 @ 25°C

**Unit Definition:** One unit is defined as the amount of enzyme required to digest 1 µg of λ DNA in 1 hour at 55°C in a total reaction volume of 50 µl.

#### Diluent Compatibility: Diluent Buffer B

300 mM NaCl, 10 mM Tris-HCl, 0.1 mM EDTA, 1 mM DTT, 500 µg/ml BSA and 50% glycerol (pH 7.4 @ 25°C).

#### Quality Control Assays

**Ligation:** After 10-fold overdigestion with BsmBI, > 95% of the DNA fragments can be ligated with T4 DNA Ligase (at a 5' termini concentration of 1–2 µM) at 16°C. Of these ligated fragments, > 95% can be recut.

**16-Hour Incubation:** A 50 µl reaction containing 1 µg of DNA and 10 units of enzyme incubated for 16 hours resulted in the same pattern of DNA bands as a reaction incubated for 1 hour with 1 unit of enzyme.

**Exonuclease Activity:** Incubation of 60 units of enzyme with 1 µg sonicated <sup>3</sup>H DNA (10<sup>5</sup> cpm/µg) for 4 hours at 55°C in 50 µl reaction buffer released < 0.1% radioactivity.

**Endonuclease Activity:** Incubation of 10 units of enzyme with 1 µg φX174 RF I DNA for 4 hours at 55°C in 50 µl reaction buffer resulted in < 10% conversion to RF II.

#### Enzyme Properties

##### Activity in NEBuffers

NEBuffer 1    75%  
NEBuffer 2    100%  
NEBuffer 3    **100%**  
NEBuffer 4    100%

When using a buffer other than the optimal (supplied) NEBuffer, it may be necessary to add more enzyme to achieve complete digestion.

**Survival in a Reaction:** Intermediate activity. Suitable for extended digestion, but < 8 hours.

**Heat Inactivation:** 100 units of enzyme were inactivated by incubation at 80°C for 20 minutes.

**Notes:** BsmBI is an isoschizomer of Esp3I.

Cleavage of mammalian genomic DNA is blocked by CpG methylation.

Incubation of 37°C results in 20% activity.

U.S. Patent No. 6,764,843

CERTIFICATE OF ANALYSIS

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