

# BsmAI



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R0529S 008120614061

## R0529S



1,000 units 5,000 U/ml Lot: 0081206

RECOMBINANT Store at -20°C Exp: 6/14

### Recognition Site:

5'... GTCTC (N)<sub>1</sub> ... 3'  
3'... CAGAG (N)<sub>5</sub> ... 5'

**Source:** An *E. coli* strain that carries the cloned BsmAI gene from *Bacillus stearothermophilus* A664 (Z. Chen)

New Reaction Buffer

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**Source:** An *E. coli* strain that carries the cloned BsmAI gene from *Bacillus stearothermophilus* A664 (Z. Chen)

New Reaction Buffer

Supplied in: 300 mM NaCl, 10 mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1 mM dithiothreitol, 500 µg/ml BSA and 50% glycerol.

**Reagents Supplied with Enzyme:**  
10X NEBuffer 4.

**Reaction Conditions:** 1X NEBuffer 4.  
**Incubate at 55°C.**

**1X NEBuffer 4:**  
50 mM potassium acetate  
20 mM Tris-acetate  
10 mM magnesium acetate  
1 mM dithiothreitol  
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 dithiothreitol, 500 µg/ml BSA and  
50% glycerol (pH 7.4 @ 25°C)

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### Quality Control Assays

**Ligation:** After 10-fold overdigestion with BsmAI, > 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 200 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.

### Enzyme Properties

#### Activity in NEBuffers:

NEBuffer 1 50%  
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.

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

**Heat Inactivation:** 80°C for 20 minutes.

**Notes:** BsmAI is an isoschizomer of Alw26I.

Cleavage of mammalian genomic DNA is blocked by some combinations of overlapping CpG methylation.

Incubation at 37°C results in 50% activity and at 65°C results in 10% activity.

Freshly diluted 10X NEBuffer is recommended for best results, as the enzyme is dependent of fresh DTT.

= Time-Saver™ Qualified (See www.neb.com for details).

CERTIFICATE OF ANALYSIS

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