

# Nb.BsrDI



1-800-632-7799  
info@neb.com  
www.neb.com



R0648S 004121014101

**R0648S**

**1,000 units 10,000 U/ml Lot: 0041210**

**RECOMBINANT Store at -20°C Exp: 10/14**

#### Recognition Site:

5'... GCAATGNN...3'  
3'... CGTTAC $\blacktriangle$ NN...5'

**Description:** Nb.BsrDI is a nicking endonuclease that cleaves only one strand of DNA on a double-stranded DNA substrate.

**Source:** An *E. coli* strain expressing only the large subunit of the BsrDI restriction gene from *Bacillus stearothermophilus* D70 (Z.Chen).

Supplied in: 150 mM NaCl, 10 mM Tris-HCl (pH 7.5), 0.1 mM EDTA, 1 mM dithiothreitol and 50% glycerol.

#### Reagents Supplied with Enzyme:

10X NEBuffer 2

**Reaction Conditions:** 1X NEBuffer 2.  
**Incubate at 65°C.**

#### 1X NEBuffer 2:

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

**Unit Definition:** One unit is defined as the amount of enzyme required to convert 1 µg of supercoiled pUC19 DNA to open circular form in 1 hour at 65°C in a total reaction volume of 50 µl.

**Diluent Compatibility:** Diluent Buffer A  
50 mM KCl, 10 mM Tris-HCl, 0.1 mM EDTA,  
1 mM dithiothreitol, 200 µg/ml BSA and  
50% glycerol (pH 7.4 @ 25°C)

#### Quality Control Assays

**16-Hour Incubation:** A 50 µl reaction containing 1 µg of DNA and 40 units of enzyme incubated for 16 hours showed no degradation of DNA fragments.

**Exonuclease Activity:** Incubation of 100 units of enzyme with 1 µg sonicated [<sup>3</sup>H] DNA (20<sup>3</sup> cpm/µg) for 4 hours at 65°C in 50 µl reaction buffer released < 0.1% radioactivity.

#### Enzyme Properties

##### Activity in NEBuffers:

NEBuffer 1	10%
NEBuffer 2	<b>100%</b>
NEBuffer 3	25%
NEBuffer 4	50%

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

**Survival in a Reaction:** A minimum of 0.25 unit is required to digest 1 µg of substrate DNA in 16 hours.

CERTIFICATE OF ANALYSIS

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

**Note:** Incubation at 37°C results in 20% activity.

Not sensitive to *dam*, *dcm* or mammalian CpG methylation.

#### References:

1. Song, Q. et al. (2010). *Anal. Chem.* [Epub ahead of print].
2. Zhang, P. et al. (2010) *Protein Expr. Purif.* 69, 226–234. [Epub 2009 Sep 9].

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