

Nt.BsmAI



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



R0121S 003120714071

R0121S

500 units 5,000 U/ml Lot: 0031207

RECOMBINANT Store at -20°C Exp: 7/14

Recognition Site:

5'...GTCTC**N**N...3'

3'...CAGAG**N**N...5'

Description: Nt.BsmAI is a nicking endonuclease that cleaves only one strand of DNA on a double-stranded DNA substrate.

Source: An *E. coli* strain expressing an altered form of the BsmAI restriction genes from *Bacillus stearothermophilus* A664

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

Reagents Supplied with Enzyme:

10X NEBuffer 4.

Reaction Conditions:

1X NEBuffer 4.
Incubate at 37°C.

1X NEBuffer 4:

50 mM potassium acetate
20 mM Tris acetate
10 mM magnesium acetate
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 plasmid DNA to open circular form in 1 hour at 37°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 40 units of enzyme with 1 µg sonicated [³H] DNA (10⁵ cpm/µg) for 4 hours at 37°C in 50 µl reaction buffer released < 0.05% radioactivity.

Enzyme Properties

Activity in NEBuffers:

NEBuffer 1 100%
NEBuffer 2 50%
NEBuffer 3 10%
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: A minimum of 0.13 unit is required to digest 1 µg of substrate DNA in 16 hours.

Heat Inactivation: 65°C for 20 minutes.

Companion Products:

Nb.BbvCI
#R0631S 1,000 units
#R0631L 5,000 units

Nt.AlwI
#R0627S 500 units
#R0627L 2,500 units

Nt.BstNBI
#R0607S 1,000 units
#R0607L 5,000 units

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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