BspQI

NEW ENGLAND BioLabs Inc.
1-800-632-7799
info@neb.com
www.neb.com

R0712S 002121013101

R0712S

RR NEB4 50° Yes

500 units	**10,000 U/ml**	**Lot: 0021210**
RECOMBINANT	**Store at –20°C**	**Exp: 10/13**

Recognition Site:

5′. . . G C T C T T C (N)$_1$▼. . . 3′
3′. . . C G A G A A G (N)$_4$▲. . . 5′

Source: An *E. coli* strain that carries the cloned BspQI gene from *Bacillus sphaericus* (X.S. Pan)

Supplied in: 20 mM Tris-HCl (pH 7.0), 0.1 mM EDTA, 500 mM KCl, 1.0 mM dithiothreitol, 500 µg/ml BSA, 0.1% Trition X-100 and 50% glycerol.

Reagents Supplied with Enzyme:
10X NEBuffer 4.

Reaction Conditions: 1X NEBuffer 4.
Incubate at 50°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 50°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).

Quality Control Assays

Ligation: After 10-fold overdigestion with BspQI, > 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 40 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 40 units of enzyme with 1 µg sonicated [^{3}H] DNA (10^5 cpm/µg) for 4 hours at 50°C in 50 µl reaction buffer released < 0.2% radioactivity.

Endonuclease Activity: Incubation of a 50 µl reaction containing 10 units of BspQI with 1 µg of mp18 RFI DNA for 4 hours at 50°C resulted in < 20% conversion to RFII as determined by agarose gel electrophoresis. R0712S 002100211020

Enzyme Properties

Activity in NEBuffers:

NEBuffer 1	10%
NEBuffer 2	50%
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: A minimum of 1.0 unit is required to digest 1 µg of substrate DNA in 16 hours.

Heat Inactivation: 80°C for 20 minutes.

Notes: Incubation at 37°C results in 10% activity.

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

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

CERTIFICATE OF ANALYSIS

BspQI

NEW ENGLAND BioLabs Inc.
1-800-632-7799
info@neb.com
www.neb.com

R0712S 002121013101

R0712S

RR NEB4 50° Yes

500 units 10,000 U/ml Lot: 0021210
RECOMBINANT Store at –20°C Exp: 10/13

Recognition Site:

5′. . . G C T C T T C (N)$_1$▼. . . 3′
3′. . . C G A G A A G (N)$_4$▲. . . 5′

Source: An *E. coli* strain that carries the cloned BspQI gene from *Bacillus sphaericus* (X.S. Pan)

Supplied in: 20 mM Tris-HCl (pH 7.0), 0.1 mM EDTA, 500 mM KCl, 1.0 mM dithiothreitol, 500 µg/ml BSA, 0.1% Trition X-100 and 50% glycerol.

Reagents Supplied with Enzyme:
10X NEBuffer 4.

Reaction Conditions: 1X NEBuffer 4.
Incubate at 50°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 50°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).

Quality Control Assays

Ligation: After 10-fold overdigestion with BspQI, > 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 40 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 40 units of enzyme with 1 µg sonicated [^{3}H] DNA (10^5 cpm/µg) for 4 hours at 50°C in 50 µl reaction buffer released < 0.2% radioactivity.

Endonuclease Activity: Incubation of a 50 µl reaction containing 10 units of BspQI with 1 µg of mp18 RFI DNA for 4 hours at 50°C resulted in < 20% conversion to RFII as determined by agarose gel electrophoresis.

Enzyme Properties

Activity in NEBuffers:

NEBuffer 1	10%
NEBuffer 2	50%
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: A minimum of 1.0 unit is required to digest 1 µg of substrate DNA in 16 hours.

Heat Inactivation: 80°C for 20 minutes.

Notes: Incubation at 37°C results in 10% activity.

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

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

CERTIFICATE OF ANALYSIS