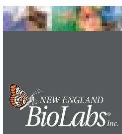
StuI



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

R0187S

1,000 units **10,000 U/ml** **Lot: 0191206**
RECOMBINANT **Store at –20°C** **Exp: 6/14**

Recognition Site:

5´. . . A G G▼C C T . . . 3´
3´. . . T C C▲G G A . . . 5´

Source: An *E. coli* strain that carries the cloned StuI gene from *Streptomyces tubercidicus* (H. Takahashi)

New Reaction Buffer

Supplied in: 50 mM KCl, 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 digest 1 µg of λ DNA 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

Ligation: After 50-fold overdigestion with StuI, > 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 80 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 300 units of enzyme with 1 µg sonicated ^{3}H DNA (10^5 cpm/µg) for 4 hours at 37°C in 50 µl reaction buffer released 0% radioactivity.

Endonuclease Activity: Incubation of 10 units of enzyme with 1 µg pBR322 DNA for 4 hours at 37°C in 50 µl reaction buffer resulted in < 20%conversion to RF II.

Blue/White Screening Assay: An appropriate vector is digested at a unique site within the *lacZ*$^{\alpha}$ gene with a 10-fold excess of enzyme. The vector DNA is then ligated, transformed, and plated onto Xgal/IPTG/Amp plates. Successful expression of β-galactosidase is a function of how intact its gene remains after cloning, an intact gene gives rise to a blue colony, removal of even a single base gives rise to a white colony. Enzyme preparations must produce fewer than 3% white colonies to be Blue/White certified.

Enzyme Properties

Activity in NEBuffers:

NEBuffer 1	100%
NEBuffer 2	100%
NEBuffer 3	50%
NEBuffer 4	**100**%

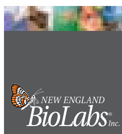
When using a buffer other than the optimal (supplied) NEBuffer, it may be necessary to add more enzyme to achieve complete digestion.

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

(See other side)

CERTIFICATE OF ANALYSIS

StuI



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(See other side)

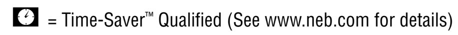
CERTIFICATE OF ANALYSIS

Heat Inactivation: 65°C for 20 minutes.

Note: Blocked by overlapping *dcm* methylation.

Companion Products:

dam⁻/dcm⁻ Competent *E. coli*
#C2925H 20 transformation reactions
#C2925I 24 transformation reactions



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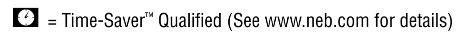

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