XmnI

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

R0194S 068121114111

R0194S

1,000 units **20,000 U/ml** **Lot: 0681211**
RECOMBINANT **Store at –20°C** **Exp: 11/14**

Recognition Site:

5′. . . G A A N N ▼ N N T T C . . . 3′
3′. . . C T T N N ▲ N N A A G . . . 5′

Source: An *E. coli* strain that carries the XmnI gene from *Xanthomonas manihotis* 7AS1 (ATCC 49764)

New Reaction Buffer

Supplied in: 50 mM KCl, 10 mM Tris-HCl (pH 8.0), 0.1 mM EDTA, 1 mM DTT, 200 µg/ml BSA and 50% glycerol.

Reagents Supplied with Enzyme:
10X NEBuffer 4, 100X BSA.

Reaction Conditions: 1X NEBuffer 4, supplemented with 100 µg/ml BSA. Incubate at 37°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 37°C in a total reaction volume of 50 µl.

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

Quality Control Assays

Ligation: After 10-fold overdigestion with XmnI, approximately 75% 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 100 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 100 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 < 0.2% radioactivity.

Endonuclease Activity: Incubation of 100 units of enzyme with 1 µg LITMUS 38i plasmid DNA for 4 hours at 37°C in 50 µl reaction buffer resulted in < 5% 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.

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

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.

Heat Inactivation: 65°C for 20 minutes.

(see other side)

CERTIFICATE OF ANALYSIS

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(see other side)
CERTIFICATE OF ANALYSIS

Notes: EcoRI sites which have been cleaved, filled in by DNA polymerase and blunt-end ligated, generate XmnI recognition sites: GAATTAATTC.

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

Conditions of low ionic strength, high enzyme concentration, glycerol concentration > 5%, or pH > 8.0 may result in star activity.

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

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