$Taq^{\alpha}I$







R0149S



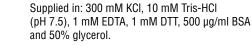
4,000 units 20,000 U/ml Lot: 0541211 RECOMBINANT Store at -20°C Exp: 11/14

Recognition Site:

5′... T^TC G A ... 3′ 3′... A G C_AT ... 5′

Source: An *E. coli* strain that carries a $Taq^{\alpha}I$ overproducing plasmid (F. Barany using an NEB clone). $Taq^{\alpha}I$ has a two amino acid replacement at its amino terminus.

New Reaction Buffer



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

Reaction Conditions: 1X NEBuffer 4. Supplemented with 100 μg/ml BSA. Incubate at 65°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 μ g of λ DNA in 1 hour at 65°C in a total reaction volume of 50 μ l.

Diluent Compatibility: Diluent Buffer B 300 mM NaCl, 10 mM Tris-HCl, 0.1 mM EDTA, 1 mM DTT, 500 µg/ml BSA and 50% glycerol (pH 7.4 @ 25°C).

Supplied in: 300 mM KCl, 10 mM Tris-HCl (pH 7.5), 1 mM EDTA, 1 mM DTT, 500 $\mu g/ml$ BSA and 50% glycerol.

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Quality Control Assays

Ligation: After 50-fold overdigestion with Taq $^{\alpha}$ I, > 95% of the DNA fragments can be ligated with T4 DNA Ligase (at a 5´ termini concentration of 1–2 μ M) at 16°C. Of these ligated fragment, > 95% can be recut.

16-Hour Incubation: A 50 µl reaction containing 1 µg of DNA and 300 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 500 units of enzyme with 1 μg sonicated ³H DNA (10⁵ cpm/μg) for 4 hours at 65°C in 50 μl reaction buffer released < 0.12% radioactivity.

Enzyme Properties

Activity in NEBuffers:

 NEBuffer 1
 50%

 NEBuffer 2
 75%

 NEBuffer 3
 100%

 NEBuffer 4
 100%

Quality Control Assays

can be recut.

1 unit of enzyme.

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

Ligation: After 50-fold overdigestion with Tag^{\alpha}l.

> 95% of the DNA fragments can be ligated with T4 DNA Ligase (at a 5' termini concentration of

1–2 μ M) at 16°C. Of these ligated fragment, > 95%

16-Hour Incubation: A 50 ul reaction containing

1 µg of DNA and 300 units of enzyme incubated

bands as a reaction incubated for 1 hour with

for 16 hours resulted in the same pattern of DNA

Exonuclease Activity: Incubation of 500 units of

enzyme with 1 ug sonicated 3H DNA

(105 cpm/μg) for 4 hours at 65°C in 50 μl

reaction buffer released < 0.12% radioactivity.

Survival in a Reaction: A minimum of 0.50 unit is required to digest 1 μg of substrate DNA in 16 hours.

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

Notes: Tag $^{\alpha}$ I is modified as described above.

Blocked by overlapping dam methylation.

Incubation without BSA results in 50% activity. Incubation at 37°C results in 10% activity. Cleaves single-stranded DNA slowly.

Companion Products:

dam-/dcm- Competent E. coli

#C2925H 20 transformation reactions #C2925I 24 transformation reactions

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

CERTIFICATE OF ANALYSIS

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$Taq^{\alpha}I$



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

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4,000 units 20,000 U/ml Lot: 0541211 RECOMBINANT Store at -20°C Exp: 11/14

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5′... T[▼]C G A ... 3′ 3′... A G C_AT ... 5′

Source: An *E. coli* strain that carries a Taq^αI overproducing plasmid (F. Barany using an NEB clone). Taq^αI has a two amino acid replacement at its amino terminus.

New Reaction Buffer

Enzyme Properties Activity in NEBuffers:

NEBuffer 1 50% NEBuffer 2 75% 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.