

# DraIII-HF™



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



R3510S 002120614061

## R3510S



**1,000 units**    **20,000 U/ml**    **Lot: 0021206**  
**RECOMBINANT**    **Store at -20°C**    **Exp: 6/14**

### Recognition Site:

5'...CACNNNGTG...3'  
3'...GTGNNNCAC...5'

**Note:** DraIII-HF™ has the same specificity as DraIII, but it has been engineered for reduced star activity.

**Source:** An *E. coli* strain that carries the cloned and modified (T181A) DraIII gene from *Deinococcus radiophilus* (ATCC 27603)

Supplied in: 300 mM NaCl, 20 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 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 B  
300 mM NaCl, 10 mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1 mM DTT, 500 µg/ml BSA and 50% glycerol.

### Quality Control Assays

**Ligation:** After 10-fold overdigestion with DraIII-HF, 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 50 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 200 units of enzyme with 1 µg sonicated [<sup>3</sup>H] DNA (10<sup>5</sup> cpm/µg) for 4 hours at 37°C in 50 µl reaction buffer released < 0.1% radioactivity.

### Enzyme Properties

#### Activity in NEBuffers:

NEBuffer 1	0%
NEBuffer 2	50%
NEBuffer 3	10%
NEBuffer 4	<b>100%</b>

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:** No.

**Plasmid Cleavage:** Number of units required to cleave 1 µg of supercoiled plasmid DNA in one hour: LITMUS = 4 units.

**Notes:** Cleavage of mammalian genomic DNA is impaired by some combinations of overlapping CpG methylation.

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

Patent pending.

CERTIFICATE OF ANALYSIS

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