



Endonuclease IV (Nfo)

Manual

Catalog #	3422	3425
Package Size	2000 units	5000 units
Concentration	10 units/ μ l	10 units/ μ l



Important!

-20°C Storage Required

- * Immediately inspect packages
- * Freeze upon receipt



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Description:

Endonuclease IV (Nfo) from *Escherichia coli* is a 32-kD metalloprotein that aids in the repair of damaged DNA. The enzyme functions both as an apurinic/apyrimidinic nuclease (1) and as a 3'-terminal di-esterase (1-4). Its 3'-terminal diesterase activity is important in the repair of DNA strand breaks generated by oxidation and ionic radiation (2, 3). In such events, the strand breaks terminate with either a 3' phosphate or a deoxyribose fragment, preventing repair by DNA polymerase I or DNA ligase. Endonuclease IV (Nfo) removes the blocking groups, leaving a free 3'-hydroxyl terminus. This enzyme does not have detectable associated exonuclease or DNA N-glycosylase activity (1).

Applications:

- Single cell gel electrophoresis (Comet assay) (5, 6)
- Alkaline elution (7)
- Alkaline unwinding (8)

Protein Purity:

The physical purity of this enzyme is $\geq 99\%$ as assessed by SDS-PAGE with Coomassie® blue staining (see figure below).

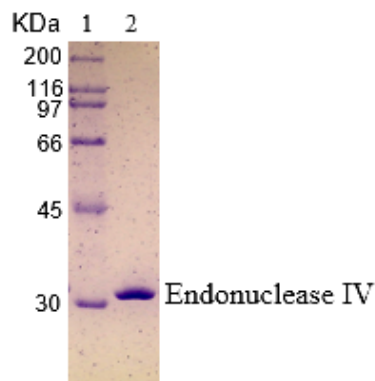


Fig: Lane 1. Protein marker
Lane 2. Endonuclease IV

Product Source:

E. coli BL21 (DE3) strain expressing *E. coli* Endonuclease IV gene.

Product Components:

- Endonuclease IV (Nfo)
- 10x Endonuclease IV reaction buffer

1x Endonuclease IV Reaction Buffer:

50 mM Tris-HCl , 10 mM MgCl₂, 1 mM DTT, 100 mM KCl (pH 7.9 @ 25°C)

Storage Buffer:

50 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.5 @ 25°C

Storage Temperature:

-20°C

Heat Inactivation:

85°C for 20 min

Unit Definition:

One unit is defined as the amount of enzyme required to cleave 1 pmol of a 50-mer oligonucleotide duplex containing a single AP site in a total reaction volume of 10 µl in 1 hour at 37°C.

Quality Control Assays:

Endonuclease IV (Nfo) is free from detectable contaminating nuclease activities.

Related Products:

- T4 UvsX Protein (Cat.# 3562, 3565)
- T4 UvsY Protein (Cat.# 3572, 3575)
- T4 gp32 Protein (Cat.# 3515)
- Bsu DNA Polymerase (Cat.# 3585)
- *Sau* DNA Polymerase (Cat.# 3595)
- Exonuclease III (Cat.# 3415)

Ordering Information:

- Order online within the USA. Place orders on **www.intactgenomics.com** using our secure Shopping Cart.
- Order by email, phone, or fax.
Email: **sales@intactgenomics.com**
Phone: (314) 942-3655 | Toll-free : 855-835-7172 | Fax: (314) 942-3656
- Order via our distributors.

References:

1. Ljungquist, S. (1977) J. Biol. Chem. 252, 2808.
2. Demple, B. et al., (1986) Proc. Natl. Acad. Sci. USA 83, 7731.
3. Levin, J.D. et al., (1988) J. Biol. Chem. 263, 8066.
4. Levin, J.D. et al., (1991) J. Biol. Chem. 266, 22893.
5. Singh, N. et al. (1961). Experimental Cell Research. 175, 184-191.

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Intact Genomics, Inc.

11840 Westline Industrial Drive, Suite 120,
St. Louis, MO. 63146, USA

Phone: (314) 942-3655 | **Toll-free :** 855-835-7172 | **Fax:** (314) 942-3656

Email: sales@intactgenomics.com | ig@intactgenomics.com

Website: www.intactgenomics.com

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