EURx® MOLECULAR BIOLOGY PRODUCTS

Tth Endonuclease IV

Cat. No.	size
E1123-01	500 units

Enzyme concentration:

10 u/µl

Product Source:

An *E. coli* strain that carries the cloned *Thermus thermophilus* endonuclease IV gene.

Unit Definition:

One unit of enzyme activity is defined as the amount of enzyme required to cleave 1 pmol of a 60-mer oligonucleotide duplex containing a single AP site in a total reaction volume of 10 µl in 1 hour at 65°C. An AP site is created by treating 10 pmol of a 60-mer oligonucleotide duplex containing a single uracil residue with 1 unit of Uracil-DNA Glycosylase (UDG) for 2 minutes at 37°C.

Inactivation:

Endonuclease IV (Tth) is highly resistant to thermal inactivation. Therefore, if enzyme removal from the reaction is required, alternative protocols should be considered, such as DNA purification on a silica column or phenol/chloroform extraction.

Storage Conditions:

Store at -20°C.

Description:

Endonuclease IV (Tth) is a thermostable apurinic-apyrimidinic (AP) class II DNA endonuclease from Thermus thermophilus. This enzyme is involved in the DNA base excision repair (BER) pathway, which catalyzes the cleavage of the DNA phosphodiester backbone at AP sites via hydrolysis, leaving a 1 nucleotide gap with 3′-hydroxyl and 5′ deoxyribose phosphate (dRP) termini. AP sites are locations in DNA that do not contain a purine or pyrimidine base that arise spontaneously or as a result of DNA damage. The enzyme also exhibits 3'-diesterase activity.

Reaction Buffer:

Endonuclease IV (Tth) is supplied with a dedicated and highly optimized reaction buffer and exhibits optimal activity at 65°C. 1x Reaction Buffer contains 1,5 mM $MgCl_2$.

Storage Buffer:

10 mM Tris-HCl, 100 mM KCl, 1 mM DTT, 0.1 mM EDTA, 0.1% Triton® X-100, 50% Glycerol, pH 7.4 @ 25°C

Quality Control:

All preparations are assayed for contaminating 3'- and 5'-exonuclease as well as nonspecific single- and double-stranded DNase activities. Typical preparations are greater than 95% pure, as judged by SDS polyacrylamide gel electrophoresis.

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