

Active Recombinant Human Topoisomerase (DNA) I, Core Domain

Cat. No. TOP1-1195H Lot. No. (See product label)

SPECIFICATION

Species Human

Source Sf9 Cells

Description

Human DNA Topoisomerase I is the best studied of the DNA topoisomerase family. It catalyzes the relaxation of both positive and negative supercoiled DNAs without the requirement of energy. In addition to DNA replication and transcriptional activation, DNA Topoisomerase I also plays a major role in pre-mRNA splicing, cell cycle, and other gene regulatory pathways during cell growth and development. The core domain expanded from amino acids 215 to 636 is highly conserved and retains DNA binding activity. The substrate specificity of Topo I has been found to nick the DNA with a preference of 5'-(A/T)(G/C)(A/T)T-3'. Camptothecin and its analogs have been tested as potent anticancer compounds by stabilizing Topo I-DNA complex, thereby inhibiting both DNA and RNA synthesis. The core domain of DNA Topoisomerase I protein (residues 197-651) was expressed in baculovirus system and purified by using an affinity column and FPLC chromatography. Purified core domain of Topo I can be used for DNA binding and protein-protein interaction assays. It can be also reconstituted with the C-terminal domain to restore the DNA relaxation activity in vitro.

Form

Liquid. Supplied in 20 mM Tris-HCl, pH 8.0, 100 mM KCl, 0.2 mM EDTA, 1 mM DTT, 20 % glycerol.

Purity

> 95% by SDS-PAGE.

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Activity	1-10 ng are sufficient for in vitro reconstituted relaxation assay in a 20 µl reaction and contain no detectable DNA relaxation activity by itself.
Usage	For in vitro use only.
Storage	Quality guaranteed for 12 months store at -80°C. Avoid freeze / thaw cycles.
GENE INFORMATION	
Gene Name	TOP1 topoisomerase (DNA) I [Homo sapiens]
Synonyms	TOP1; topoisomerase (DNA) I; TOPI; DNA topoisomerase1; EC 5.99.1.2; OTTHUMP00000031713; DNA topoisomerase I; topoisomerase I; type I DNA topoisomerase
Gene ID	7150
mRNA Refseq	NM_003286
Protein Refseq	NP_003277
MIM	126420
UniProt ID	P11387
Chromosome Location	20q12-q13.1
Function	ATP binding; DNA topoisomerase (ATP-hydrolyzing) activity; DNA topoisomerase type I activity; chromatin binding; nucleotide binding; protein binding

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