

Active Recombinant Human TOP1 Protein

Cat. No. TOP1-1533H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human TOP1 protein without tag was expressed in the baculovirus system.
Species	Human
Source	Insect Cells
Description	This gene encodes a DNA topoisomerase, an enzyme that controls and alters the topologic states of DNA during transcription. This enzyme catalyzes the transient breaking and rejoining of a single strand of DNA which allows the strands to pass through one another, thus altering the topology of DNA. This gene is localized to chromosome 20 and has pseudogenes which reside on chromosomes 1 and 22. [provided by RefSeq, Jul 2008]
Bio-activity	Relaxation assays were carried out in a final volume of 25 µl in recombinant topo I reaction buffer (10X reaction buffer, supplied with this product is: 100 mM Tris-Cl, pH 7.9, 1.5 M NaCl, 1% BSA, 1 mM Spermidine, 50% glycerol). Supercoiled plasmid DNA was included at 0.25 µg/reaction. Reactions terminated with 5 µl (per 20 µ reaction volume) of stop buffer (5% sarkosyl, 0.0025% bromophenol blue, 25% glycerol). Reaction products were analyzed on a 1% native agarose gel. Under these conditions, relaxation activity is easily detectable (typically we see 10-40 units of activity per µl).
Molecular Mass	100 kDa

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Quality Control Test

A test for nuclease contamination was carried out by assaying for the formation of linear KDNA and linear plasmid DNA. Incubations of 1 µg of catenated KDNA or supercoiled pUC19 DNA (4 hrs. at 37centigrade in the presence of 10 mM MgCl₂) were performed. Linear DNA or breakdown products were not generated under these conditions.

A check for cross contamination with topo II was negative. There was no decatenation of kDNA in topo II reaction conditions.

The final fraction of topoisomerase I is a column pool and is in the following buffer: 20 mM NaH₂PO₄ (pH7.4), 300 mM NaCl, 50 µg/ml BSA, 50% glycerol, 50 mM Imidazole. The final fraction was analyzed by SDS-PAGE and shown to contain a single, predominant band of 100 kDa.

Actual concentration can range from 25mM-100mM, according to how stock enzyme was diluted in storage buffer.

Storage

The enzyme is shipped on dry ice and should be stored at -20 centigrade. It has a life-time of about 6 months when stored under optimal conditions. Repeat freeze/thaw cycles will accelerate loss.

GENE INFORMATION

Gene Name	TOP1 DNA topoisomerase I [Homo sapiens (human)]
Official Symbol	TOP1
Synonyms	TOPI; DNA topoisomerase 1; topoisomerase (DNA) I; type I DNA topoisomerase; EC 5.99.1.2
Gene ID	7150
mRNA Refseq	NM_003286

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Protein Refseq	NP_003277
MIM	126420
UniProt ID	P11387

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