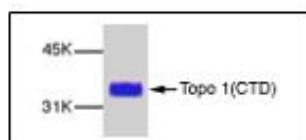


## Topo I CTD

### Human DNA Topoisomerase I, C-terminal Domain (CTD)

human, recombinant, Sf9 insect cells

Cat. No.	Amount
PR-736	5 µg



For *in vitro* use only  
Quality guaranteed for 12 months  
Store at -80°C

#### Avoid freeze / thaw cycles

#### Form

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

#### Activity

1-10 ng of Topo I CTD can be reconstituted with core domain to restore DNA relaxation activity and contains no detectable DNA relaxation activity by itself.

#### Molecular Weight

17 kDa

#### Purity

> 95% by SDS-PAGE.

#### Description

Human DNA Topoisomerase I catalyzes the relaxation of both positive and negative supercoils 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, recombination, chromatin remodeling, and other DNA or RNA templating activities.

The C-terminal domain of DNA Topoisomerase I expanded from amino acids 713 to 765 is highly conserved and connected to the core domain by a poorly conserved linker domain (residues 636-713). An active site tyrosine has been characterized at position 723. Mutation from tyrosine to phenylalanine at position 723 preferentially binds the supercoiled DNA rather than relaxed DNA in the mixture of supercoiled and relaxed DNAs.

The C-terminal domain of DNA Topoisomerase I protein (residues 651-765) was expressed in baculovirus system and purified by using an affinity column and FPLC chromatography.

Purified Topo I CTD can be reconstituted with the core domain for *in vitro* DNA relaxation assay.

Purified Topo I protein (CTD) is greater than 95% homogeneous and contains no detectable protease, DNase, and RNase activity.

#### Selected References:

- Liu (1989) DNA topoisomerase poisons as antitumor drugs. *Annu. Rev. Biochem.* **58**:351.
- Champoux (2001) DNA topoisomerases: structure, function, and mechanism. *Annu. Rev. Biochem.* **70**:369.
- Redinbo *et al.* (1998) Crystal structures of human topoisomerase I in covalent and noncovalent complexes with DNA. *Science* **279**:1504.
- Madden *et al.* (1992) Overexpression of human topoisomerase I in baby hamster kidney cells: hypersensitivity of clonal isolates to camptothecin. *Cancer Res.* **52**:525.
- Lynn *et al.* (1989) Peptide sequencing and site-directed mutagenesis identify tyrosine-727 as the active site tyrosine of *Saccharomyces cerevisiae* DNA topoisomerase I. *Proc. Natl. Acad. Sci. USA* **86**:3559.
- Madden *et al.* (1996) Preferential binding of human topoisomerase I to superhelical DNA. *EMBO J.* **14**:5399.