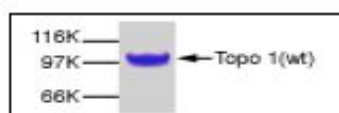


Topo I

Human DNA Topoisomerase I, wild type human, recombinant, Sf9 insect cells

Cat. No.	Amount
PR-735	5 μ g



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

0.1-1 ng is sufficient for relaxing 0.5 μ g of pBR322 supercoiled DNA in a 20 μ l reaction.

Application

Purified Topo I has been used for *in vitro* transcriptional activation, pre-mRNA splicing/phosphorylation, DNA binding, and DNA relaxation assays.

Molecular Weight

100 kDa

Purity

> 95% by SDS-PAGE

Description

Human DNA Topoisomerase I (Topo I) is a monomeric protein of 765 amino acids encoded by a single-copy gene. Based on its function, DNA Topoisomerase I has been subdivided into four distinct domains. The N-terminal 214 amino acids of topo I comprise a highly charged N-terminal domain involved in protein-protein interactions with a number of cellular proteins. The highly conserved core domain expanded from amino acids 215 to 636 contains most catalytic residues and retains DNA binding activity. The active C-terminal domain (residues 713-765) is connected to the core domain by a poorly conserved linker domain (residues 636-712).

Human DNA Topoisomerase I is the best studied member 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. Since Topo I can cause large amounts of single-strand DNA breaks and this kind of DNA damage closely relates to most cancer, it is therefore believed that DNA Topo I can be an important target for antitumor agents.

The wild type DNA Topoisomerase I protein (765 amino acids) was expressed in baculovirus system and purified by using an affinity column and FPLC chromatography. Purified Topo I protein is greater than 95% homogeneous and contains no detectable protease, DNase, and RNase activity.

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