

# Topo I (H-300): sc-10783

## BACKGROUND

DNA topoisomerase I and II (Topo I and Topo II) are nuclear enzymes that regulate the topological structure of DNA in eukaryotic cells by transiently breaking and rejoining DNA strands. Eukaryotic topoisomerases are capable of relaxing both positive and negative supercoils, whereas prokaryotic topoisomerases relax only negative supercoils. DNA topoisomerases play a role in DNA replication, recombination and transcription, and have been identified as targets of numerous anticancer drugs. Topo I, a ubiquitously expressed, soluble enzyme, acts by introducing a transient break in one strand of DNA, while Topo II acts by making a transient double-strand break. Topo II is encoded by two different genes to generate two distinct isoforms that are designated Topo II $\alpha$  and Topo II $\beta$ . Topo II $\beta$  and Topo II $\alpha$  are largely homologous at their N-terminal three quarters, however, the C-terminal segments are considerably divergent, suggesting that these regions may mediate different cellular functions and account for the observed differential tissue expression patterns of the two isoforms.

## CHROMOSOMAL LOCATION

Genetic locus: TOP1 (human) mapping to 20q12; Top1 (mouse) mapping to 2 H2.

## SOURCE

Topo I (H-300) is a rabbit polyclonal antibody raised against amino acids 685-765 of Topo I of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Topo I (H-300) is recommended for detection of Topo I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Topo I (H-300) is also recommended for detection of Topo I in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Topo I siRNA (h): sc-36694, Topo I siRNA (m): sc-36693, Topo I shRNA Plasmid (h): sc-36694-SH, Topo I shRNA Plasmid (m): sc-36693-SH, Topo I shRNA (h) Lentiviral Particles: sc-36694-V and Topo I shRNA (m) Lentiviral Particles: sc-36693-V.

Molecular Weight of Topo I: 100 kDa.

Positive Controls: Ramos nuclear extract: sc-2153, K-562 nuclear extract: sc-2130 or A-431 whole cell lysate: sc-2201.

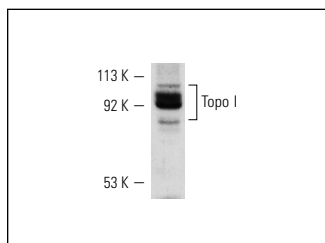
## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

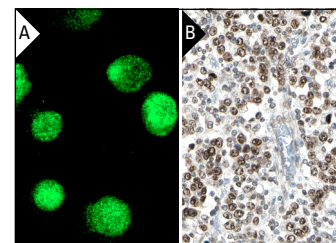
## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## DATA



Topo I (H-300): sc-10783. Western blot analysis of Topo I expression in Ramos nuclear extract.



Topo I (H-300): sc-10783. Immunofluorescence staining of methanol-fixed NAMALWA cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach cancer tissue showing nuclear staining of tumor cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

## SELECT PRODUCT CITATIONS

- Date, H., et al. 2004. The FHA domain of aprataxin interacts with the C-terminal region of XRCC1. *Biochem. Biophys. Res. Commun.* 325: 1279-1285.
- Wenk, J., et al. 2004. Overexpression of phospholipid-hydroperoxide glutathione peroxidase in human dermal fibroblasts abrogates UVA irradiation-induced expression of interstitial collagenase/matrix metalloproteinase-1 by suppression of phosphatidylcholine hydroperoxide-mediated NF $\kappa$ B activation and interleukin-6 release. *J. Biol. Chem.* 279: 45634-45642.
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- Wang, H., et al. 2009. Targeting NF $\kappa$ B with a natural triterpenoid alleviates skin inflammation in a mouse model of psoriasis. *J. Immunol.* 183: 4755-4763.
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**MONOS**  
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Try **Topo I (C-21): sc-32736** or **Topo I (H-5): sc-271285**, our highly recommended monoclonal alternatives to Topo I (H-300). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Topo I (C-21): sc-32736**.