

Topo II β (F-19): sc-5353

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 α and Topo II β . Topo II α and Topo II β 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.

REFERENCES

1. D'Arpa, P., et al. 1988. cDNA cloning of human DNA Topoisomerase I: catalytic activity of a 67.7 kDa carboxyl-terminal fragment. *Proc. Natl. Acad. Sci. USA* 85: 2543-2547.
2. Chung, T.D., et al. 1989. Characterization and immunological identification of cDNA clones encoding two human DNA Topoisomerase II isozymes. *Proc. Natl. Acad. Sci. USA* 86: 9431-9435.
3. Austin, C.A., et al. 1990. Isolation and characterization of a human cDNA clone encoding a novel DNA Topoisomerase II homologue from HeLa cells. *FEBS Lett.* 266: 115-117.
4. Kunze, N., et al. 1991. Structure of the human type I DNA Topoisomerase gene. *J. Biol. Chem.* 266: 9610-9616.
5. Tan, K.B., et al. 1992. Topoisomerase II α and Topoisomerase II β genes: characterization and mapping to human chromosomes 17 and 3, respectively. *Cancer Res.* 52: 231-234.
6. Roca, J. 1995. The mechanisms of DNA topoisomerases. *Trends Biochem. Sci.* 20: 156-160.
7. Stewart, L., et al. 1998. A model for the mechanism of human Topoisomerase I. *Science* 279: 1534-1541.

CHROMOSOMAL LOCATION

Genetic locus: TOP2B (human) mapping to 3p24.2; Top2b (mouse) mapping to 14 A2.

SOURCE

Topo II β (F-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Topo II β of human origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

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

Blocking peptide available for competition studies, sc-5353 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Topo II β (F-19) is recommended for detection of Topo II β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

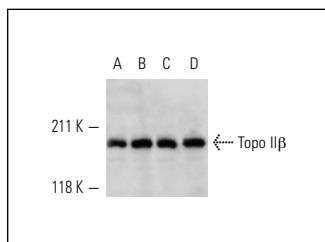
Topo II β (F-19) is also recommended for detection of Topo II β in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Topo II β siRNA (h): sc-36697, Topo II β siRNA (m): sc-36698, Topo II β shRNA Plasmid (h): sc-36697-SH, Topo II β shRNA Plasmid (m): sc-36698-SH, Topo II β shRNA (h) Lentiviral Particles: sc-36697-V and Topo II β shRNA (m) Lentiviral Particles: sc-36698-V.

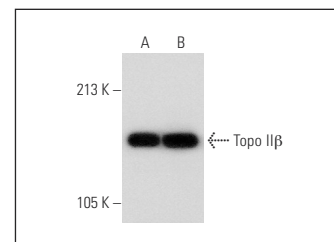
Molecular Weight of Topo II β : 180 kDa.

Positive Controls: U-937 nuclear extract: sc-2156, HeLa nuclear extract: sc-2120 or K-562 nuclear extract: sc-2130.

DATA



Topo II β (F-19): sc-5353. Western blot analysis of Topo II β expression in U-937 (A), MEG-01 (B), CCRF-CEM (C) and HeLa (D) nuclear extracts.



Topo II β (F-19): sc-5353. Western blot analysis of Topo II β expression in HeLa (A) and K-562 (B) nuclear extracts.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **Topo II β (A-12): sc-365071** or **Topo II β (B-6): sc-365952**, our highly recommended monoclonal alternatives to Topo II β (F-19).