

# Topo III $\beta$ -1 (H-300): sc-13061

## BACKGROUND

DNA topoisomerases are nuclear enzymes that regulate the topological structure of DNA by transiently breaking and rejoining DNA strands. Although DNA topoisomerase I and DNA topoisomerase II relax both positive and negative supercoils, DNA topoisomerase III relaxes only negative supercoils. DNA topoisomerase III $\alpha$  exists as a long and a short isoform, which are produced by alternative splicing. DNA topoisomerase III $\alpha$ , which localizes to the nucleolus, is constitutively expressed and remains at high levels throughout the cell cycle in HL-60 cells. DNA topoisomerase III $\beta$  exists as three isoforms, namely  $\beta$ -1,  $\beta$ -2 and  $\beta$ -3, also produced by alternative splicing. DNA topoisomerase III  $\beta$ -1 is expressed in testes, heart and skeletal muscle, whereas  $\beta$ -2 is expressed in thymus, kidney and pancreas.

## 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. Kunze, N., et al. 1991. Structure of the human type I DNA topoisomerase gene. J. Biol. Chem. 266: 9610-9616.
3. Hanai, R., et al. 1996. Human TOP3: A single-copy gene encoding DNA topoisomerase III. Proc. Natl. Acad. Sci. USA 93: 3653-3657.
4. Kawasaki, K., et al. 1997. One-megabase sequence analysis of the human immunoglobulin  $\lambda$  gene locus. Genome Res. 7: 250-261.
5. Ng, S.W., et al. 1999. A new human topoisomerase III that interacts with SGS1 protein. Nucleic Acids Res. 27: 993-1000.
6. Lin, C.W., et al. 2000. Differential expression of human topoisomerase III $\alpha$  during the cell cycle progression in HL-60 leukemia cells and human peripheral blood lymphocytes. Exp. Cell Res. 256: 225-236.

## CHROMOSOMAL LOCATION

Genetic locus: TOP3B (human) mapping to 22q11.22; Top3b (mouse) mapping to 16 A3.

## SOURCE

Topo III $\beta$ -1 (H-300) is a rabbit polyclonal antibody raised against amino acids 563-862 mapping at the C-terminus of Topo III $\beta$ -1 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.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

Topo III $\beta$ -1 (H-300) is recommended for detection of Topo III $\beta$ -1 of mouse, rat and human origin by 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), immunohistochemistry (including paraffin-embedded sections) (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 III $\beta$ -1 (H-300) is also recommended for detection of Topo III $\beta$ -1 in additional species, including equine, canine, bovine, porcine and avian.

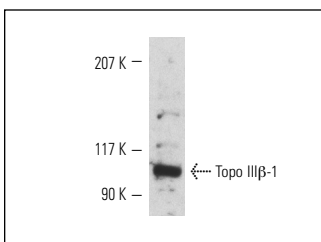
Suitable for use as control antibody for Topo III $\beta$  siRNA (h): sc-36701, Topo III $\beta$  siRNA (m): sc-36702, Topo III $\beta$  shRNA Plasmid (h): sc-36701-SH, Topo III $\beta$  shRNA Plasmid (m): sc-36702-SH, Topo III $\beta$  shRNA (h) Lentiviral Particles: sc-36701-V and Topo III $\beta$  shRNA (m) Lentiviral Particles: sc-36702-V.

Molecular Weight of Topo III $\beta$ -1: 100 kDa.

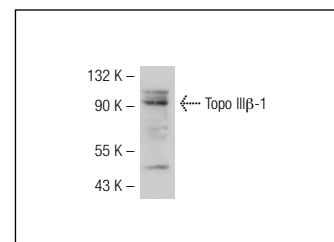
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz<sup>TM</sup> Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz<sup>TM</sup>: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



Topo III $\beta$ -1 (H-300): sc-13061. Western blot analysis of Topo III $\beta$ -1 expression in IMR-32 nuclear extract.



Topo III $\beta$ -1 (H-300): sc-13061. Western blot analysis of Topo III $\beta$ -1 expression in mouse testis tissue extract.

## RESEARCH USE

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



Try **Topo III $\beta$ -1 (B-10): sc-137238**, our highly recommended monoclonal alternative to Topo III $\beta$ -1 (H-300).