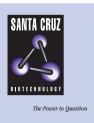
SANTA CRUZ BIOTECHNOLOGY, INC.

Topo IIIα (H-300): sc-13060



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 α exists as a long and a short isoform, which are produced by alternative splicing. DNA topoisomerase III α , which localizes to the nucleolus, is constitutively expressed and remains at high levels throughout the cell cycle in HL-60 cells. DNA topoisomerase III β exists as three isoforms, namely $\beta 1$, $\beta 2$, and $\beta 3$, also produced by alternative splicing. DNA topoisomerase III β skeletal muscle, whereas $\beta 2$ is expressed in thymus, kidney, and pancreas.

REFERENCES

- 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.
- 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.
- Kawasaki, K., et al. 1997. One-megabase sequence analysis of the human immunoglobulin lambda gene locus. Genome Res. 7: 250-261.
- Ng, S.W., et al. 1999. A new human topoisomerase III that interacts with SGS1 protein. Nucleic Acids Res. 27: 993-1000.
- 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: TOP3A (human) mapping to 17p11.2; Top3a (mouse) mapping to 11.

SOURCE

Topo III α (H-300) is a rabbit polyclonal antibody raised against amino acids 702-1001 mapping at the C-terminus of Topo III α of human origin.

PRODUCT

Each vial contains 200 μg lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **D0 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 or our catalog for detailed protocols and support products.

APPLICATIONS

Topo III α (H-300) is recommended for detection of DNA topoisomerase III α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100–500 µg 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).

Suitable for use as control antibody for Topo III α siRNA (h): sc-36699 and Topo III α siRNA (m): sc-36700.

Molecular Weight of Topo IIIa: 110 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or K-562 nuclear extract: sc-2130.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/ 2.0 ml). 3) 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[™] Mounting Medium: sc-24941.

RESEARCH USE

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