SANTA CRUZ BIOTECHNOLOGY, INC.

Topo IIIβ-1,2,3 (L-17): sc-11265

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 β1, β2, and β3, also produced by alternative splicing. DNA topoisomerase III β1 is expressed in testes, heart, and skeletal muscle, whereas β2 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 α 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 IIIβ-1,2,3 (L-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Topo IIIβ-1,2,3 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-11265 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Topo IIIβ-1,2,3 (L-17) is recommended for detection of Topo IIIβ-1, Topo IIIβ-2 and Topo IIIβ-3 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).

Topo IIIβ-1,2,3 (L-17) is also recommended for detection of Topo IIIβ-1, Topo IIIβ-2 and Topo IIIβ-3 in additional species, including equine, canine, bovine, porcine and avian.

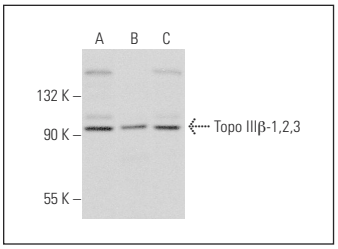
Suitable for use as control antibody for Topo IIIβ siRNA (h): sc-36701, Topo IIIβ siRNA (m): sc-36702, Topo IIIβ shRNA Plasmid (h): sc-36701-SH, Topo IIIb shRNA Plasmid (m): sc-36702-SH, Topo IIIβ shRNA (h) Lentiviral Particles: sc-36701-V and Topo IIIβ shRNA (m) Lentiviral Particles: sc-36702-V.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, NTERA-2 cl.D1 whole cell lysate: sc-364181 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Topo IIIβ-1,2,3 (L-17): sc-11265. Western blot analysis of Topo IIIβ-1,2,3 expression in NTERA-2 cl.D1 (**A**), NIH/3T3 (**B**) and HeLa (**C**) whole cell lysates.

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.