

Topo II α (H-231): sc-13058

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 β and Topo II α 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.

CHROMOSOMAL LOCATION

Genetic locus: TOP2A (human) mapping to 17q21.2; Top2a (mouse) mapping to 11 D.

SOURCE

Topo II α (H-231) is a rabbit polyclonal antibody raised against amino acids 1301-1531 of Topo II α of human origin.

PRODUCT

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

APPLICATIONS

Topo II α (H-231) is recommended for detection of DNA Topoisomerase II α of human and, to a lesser extent, mouse and rat 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).

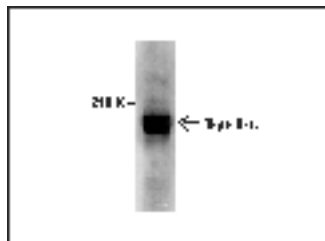
Suitable for use as control antibody for Topo II α siRNA (h): sc-36695, Topo II α siRNA (m): sc-36696, Topo II α shRNA Plasmid (h): sc-36695-SH, Topo II α shRNA Plasmid (m): sc-36696-SH, Topo II α shRNA (h) Lentiviral Particles: sc-36695-V and Topo II α shRNA (m) Lentiviral Particles: sc-36696-V.

Molecular Weight of Topo II α : 170 kDa.

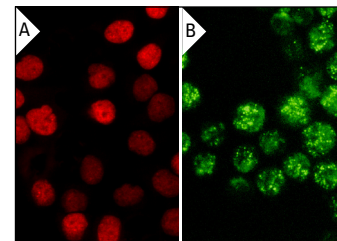
STORAGE

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

DATA



Topo II α (H-231): sc-13058. Western blot analysis of Topo II α protein in Jurkat nuclear extract.



Topo II α (H-231): sc-13058. Immunofluorescence staining of methanol-fixed HeLa (A) and K-562 (B) cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Reed, M.F., et al. 2006. Inhibition of retinoblastoma tumor suppressor activity by RNA interference in lung cancer lines. *Ann. Thorac. Surg.* 82: 249-253.
2. Kouzu-Fujita, M., et al. 2009. Coactivation of estrogen receptor β by gonadotropin-induced cofactor GIOT-4. *Mol. Cell. Biol.* 29: 83-92.
3. Castanotto, D., et al. 2009. CRM1 mediates nuclear-cytoplasmic shuttling of mature microRNAs. *Proc. Natl. Acad. Sci. USA* 106: 21655-21659.
4. Sun, Y., et al. 2009. Separase is recruited to mitotic chromosomes to dissolve sister chromatid cohesion in a DNA-dependent manner. *Cell* 137: 123-132.
5. Chou, S.M., et al. 2010. Calcium-induced cleavage of DNA topoisomerase I involves the cytoplasmic-nuclear shuttling of calpain 2. *Cell. Mol. Life Sci.* 68: 2769-2784.
6. Rossi, E., et al. 2010. TOP2A and HER-2/neu overexpression/amplification in Barrett's oesophagus, dysplasia and adenocarcinoma. *Histopathology* 57: 81-89.
7. Bae, Y., et al. 2010. Mixed pH-sensitive polymeric micelles for combination drug delivery. *Pharm. Res.* 27: 2421-2432.

RESEARCH USE

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



Try **Topo II α (G-6): sc-166934** or **Topo II α (A-8): sc-165986**, our highly recommended monoclonal alternatives to Topo II α (H-231).