SANTA CRUZ BIOTECHNOLOGY, INC.

Topo I (C-21): sc-32736

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 IIα and Topo IIβ. Topo IIα and Topo IIβ 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.

CHROMOSOMAL LOCATION

Genetic locus: TOP1 (human) mapping to 20q12; Top1 (mouse) mapping to 2 H2.

SOURCE

Topo I (C-21) is a mouse monoclonal antibody raised against recombinant Topo I of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Topo I (C-21) is available conjugated to agarose (sc-32736 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32736 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-32736 PE), fluorescein (sc-32736 FITC) or Alexa Fluor® 488 (sc-32736 AF488) or Alexa Fluor® 647 (sc-32736 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Topo I (C-21) is recommended for detection of Topo I 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Topo I siRNA (h): sc-36694, Topo I siRNA (m): sc-36693, Topo I shRNA Plasmid (h): sc-36694-SH, Topo I shRNA Plasmid (m): sc-36693-SH, Topo I shRNA (h) Lentiviral Particles: sc-36694-V and Topo I shRNA (m) Lentiviral Particles: sc-36693-V.

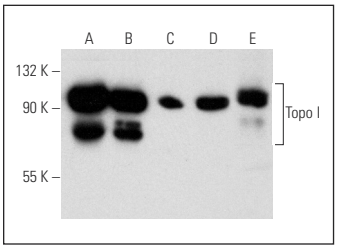
Molecular Weight of Topo I: 100 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, HEL 92.1.7 cell lysate: sc-2270 or Daudi cell lysate: sc-2415.

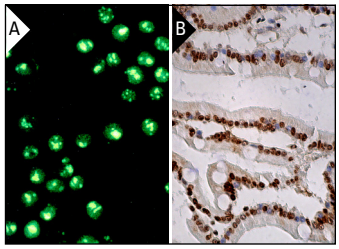
STORAGE

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

DATA



Topo I (C-21): sc-32736. Western blot analysis of Topo I expression in Ramos (**A**), Jurkat (**B**), SK-N-SH (**C**), HEL 92.1.7 (**D**) and Daudi (**E**) whole cell lysates.



Topo I (C-21): sc-32736. Immunofluorescence staining of KB cells. Kindly provided by Dr. Shin-young Park at Yale University (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

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4. Liu, Y., et al. 2015. Effects of cinobufacini injection on cell proliferation and the expression of topoisomerases in human Hep G2 hepatocellular carcinoma cells. Mol. Med. Rep. 12: 1598-1604.
5. Pollock, J.A., et al. 2016. Inhibiting androgen receptor nuclear entry in castration-resistant prostate cancer. Nat. Chem. Biol. 12: 795-801.
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RESEARCH USE

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