SANTA CRUZ BIOTECHNOLOGY, INC.

Topo IIα (3F6): sc-56803

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, an 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: TOP2A (human) mapping to 17q21.2.

SOURCE

Topo IIα (3F6) is a mouse monoclonal antibody raised against a recombinant fragment of Topo IIα of human origin.

PRODUCT

Each vial contains 250 µl culture supernatant containing IgG_1 with < 0.1% sodium azide.

APPLICATIONS

Topo IIα (3F6) is recommended for detection of Topo IIα of human and canine origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunoprecipitation [10-20 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200) and flow cytometry (10-20 µl per 1 x 10^6 cells); non cross-reactive with Topo II β or Topo I.

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

Molecular Weight of Topo IIα: 170 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, Jurkat nuclear extract: sc-2132 or C32 nuclear extract: sc-2136.

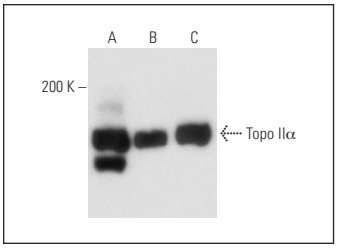
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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

DATA



Topo IIα (3F6): sc-56803. Western blot analysis of Topo IIα expression in K-562 (**A**), Jurkat (**B**) and C32 (**C**) nuclear extracts.

SELECT PRODUCT CITATIONS

1. Gobble, R.M., et al. 2011. Expression profiling of liposarcoma yields a multigene predictor of patient outcome and identifies genes that contribute to liposarcomagenesis. Cancer Res. 71: 2697-2705.
2. Rossman, J., et al. 2011. Phase II study of dose-intense chemotherapy with sequential topoisomerase-targeting regimens with irinotecan/oxaliplatin followed by etoposide/carboplatin in chemotherapy naive patients with extensive small cell lung cancer. Lung Cancer 72: 219-223.
3. Xue, X., et al. 2012. Riccardin D, a novel macrocyclic bisbibenzyl, induces apoptosis of human leukemia cells by targeting DNA topoisomerase II. Invest. New Drugs 30: 212-222.
4. Ageberg, M., et al. 2013. The histone deacetylase inhibitor valproic acid sensitizes diffuse large B-cell lymphoma cell lines to CHOP-induced cell death. Am. J. Transl. Res. 5: 170-183.
5. Kong, L.Y., et al. 2014. Therapeutic targets in subependymoma. J. Neuroimmunol. 277: 168-175.
6. Chen, J., et al. 2018. The linker histone H1.2 is a novel component of the nucleolar organizer regions. J. Biol. Chem. 293: 2358-2369.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.