**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, whereas Topo II acts by making a transient double-strand break. Topo II is an enzyme responsible for 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, whereas 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.

**REFERENCES**


**CHROMOSOMAL LOCATION**

Genetic locus: TOP2A (human) mapping to 17q21.2.

**SOURCE**

Topo IIα (E-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1483-1517 near the C-terminus of Topo IIα of human origin.

**PRODUCT**

Each vial contains 200 µg IgG1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365917 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

**APPLICATIONS**

Topo IIα (E-11) is recommended for detection of Topo IIα of human origin by Western Blotting (starting dilution 1:100, 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 1:30-1:300).

Suitable for use as control antibody for Topo IIα shRNA Plasmid (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: HeLa nuclear extract: sc-2120, K-562 nuclear extract: sc-2130 or Jurkat nuclear extract: sc-2132.

**RECOMMENDED SUPPORT REAGENTS**

To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-HRP (Cruz Marker): sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

**DATA**

Topo IIα (E-11): sc-365917. Western blot analysis of Topo IIα expression in Jurkat (A) and HeLa (B) nuclear extracts.

Topo IIα (E-11): sc-365917. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

**STORAGE**

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

**RESEARCH USE**

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

**PROTOCOLS**

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