

Topo III β -1 (B-10): sc-137238

BACKGROUND

DNA topoisomerases are nuclear enzymes that regulate the topological structure of DNA by transiently breaking and rejoining DNA strands. Although DNA topoisomerase I (Topo I) and Topo II relax both positive and negative supercoils, Topo III relaxes only negative supercoils. Topo III α exists as a long and a short isoform, which are produced by alternative splicing. Topo III α , which localizes to the nucleolus, is constitutively expressed and remains at high levels throughout the cell cycle in HL-60 cells. Topo III β exists as three isoforms, β -1, β -2 and β -3, also produced by alternative splicing. Topo III β -1 is expressed in testis, heart and skeletal muscle, whereas Topo III β -2 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 λ 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.

CHROMOSOMAL LOCATION

Genetic locus: TOP3B (human) mapping to 22q11.22; Top3b (mouse) mapping to 16 A3.

SOURCE

Topo III β -1 (B-10) is a mouse monoclonal antibody raised against amino acids 563-862 of Topo III β -1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Topo III β -1 (B-10) is available conjugated to agarose (sc-137238 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137238 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137238 PE), fluorescein (sc-137238 FITC), Alexa Fluor[®] 488 (sc-137238 AF488), Alexa Fluor[®] 546 (sc-137238 AF546), Alexa Fluor[®] 594 (sc-137238 AF594) or Alexa Fluor[®] 647 (sc-137238 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-137238 AF680) or Alexa Fluor[®] 790 (sc-137238 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

STORAGE

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

APPLICATIONS

Topo III β -1 (B-10) is recommended for detection of Topo III β -1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 III β siRNA (h): sc-36701, Topo III β siRNA (m): sc-36702, Topo III β shRNA Plasmid (h): sc-36701-SH, Topo III β shRNA Plasmid (m): sc-36702-SH, Topo III β shRNA (h) Lentiviral Particles: sc-36701-V and Topo III β shRNA (m) Lentiviral Particles: sc-36702-V.

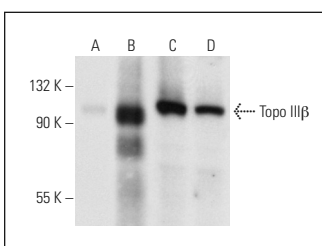
Molecular Weight of Topo III β -1: 100 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, Topo III β (m): 293T Lysate: sc-124216 or K-562 whole cell lysate: sc-2203.

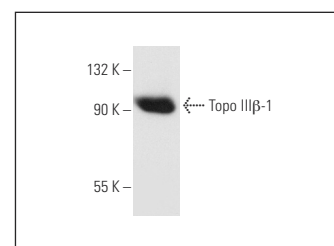
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



Topo III β -1 (B-10): sc-137238. Western blot analysis of Topo III β expression in non-transfected 293T: sc-117752 (A), mouse Topo III β transfected 293T: sc-124216 (B), K-562 (C) and IMR-32 (D) whole cell lysates.



Topo III β -1 (B-10): sc-137238. Western blot analysis of Topo III β -1 expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 2022. Acox2 is a regulator of lysine crotonylation that mediates hepatic metabolic homeostasis in mice. *Cell Death Dis.* 13: 279.

RESEARCH USE

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