

AM00154PU-N**Monoclonal Antibody to TOP1 / SCL-70 - Purified****Alternate names:**

DNA topoisomerase 1, DNA topoisomerase I, Top-1

Quantity:

0.1 mg

Background:

Topoisomerases are nuclear enzymes involved in a variety of cellular activities such as chromosome condensation, DNA replication, transcription, recombination and segregation at mitosis. Human topoisomerase I is a 100kDa protein capable of relaxing positively and negatively supercoiled DNA by performing a transient single stranded nick which is then relegated at the end of the reaction. It has been shown that the enzyme is located in regions of the genome that are undergoing active RNA synthesis, where it probably reduces superhelical stresses in the DNA, enabling RNA polymerase to function properly. Both DNA topoisomerases I and II have been found to be targets of autoantibodies in the sera of patients with certain autoimmune diseases such as systemic lupus erythematosus, and also of some anti tumor drugs and antibiotics. Elevated levels of DNA topoisomerase I, detected by transfer assays, have been demonstrated in colorectal tumors compared with normal colon mucosa as a result of increased transcription or mRNA stability.

DNA Topoisomerases catalyze strand breakage of DNA molecules. During DNA cleavage, a tyrosyl residue of the enzyme breaks the DNA strand by forming a covalent phosphotyrosine residue. Rejoining of the DNA strands occurs by a second transesterification reaction.

Uniprot ID:[P11387](#)**NCBI:**[NP_003277.1](#)**GeneID:**[7150](#)**Host / Isotype:**

Mouse / IgG1

Recommended Isotype Controls:

SM10P (for use in human samples), AM03095PU-N

Clone:

23B11

Immunogen:

Synthetic peptide conjugated to KLH.
Epitope: amino acids 699-725.
Remarks: Mol. Weight of Antigen: 90 kDa

Format:

State: Lyophilized purified IgG fraction
Purification: Size Exclusion Chromatography
Buffer System: 1ml 2 x PBS
Preservatives: 0.09% Sodium Azide
Stabilizers: PEG and Sucrose
Reconstitution: Restore with 1 ml H₂O (15 min, RT).

Applications:

Western Blot: 0.5 µg/ml for HRPO/ECL detection.
Recommended blocking buffer: Casein/Tween 20 based blocking and blot incubation buffer.
This product contains a Positive Control for Immunoblot Applications (for details see "Protocols")

Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Molecular Weight:

90 kDa

Specificity:

This antibody specifically recognizes Topoisomerase 1 in Western blot applications.

Species: Human.

Other species not tested.

Storage:

Store lyophilized (preferably in a desiccator) at -20°C and reconstituted (aliquote and freeze in liquid nitrogen) at -80°C.

Avoid repeated freezing and thawing.

Thaw aliquots at 37°C. Thawed aliquots may be stored at 4°C up to 3 months.

Shelf life: one year from despatch.

Protocols:

Positive Control: HepG2 Untreated Cell Lysate

Formulation:

Lyophilized Cell Lysate from Serum starved HepG2 Cells.

Stability:

Reconstitute by addition of 200 µl H₂O. After complete solubilization add 200 µl 2x SDS-PAGE sample buffer, mix and incubate at 90°C for 5 min.

Application:

The Positive Control cell lysate is recommended for immunoblot applications. 20µl of positive control cell lysate corresponds to ca 80.000 cells.

Use 20µl/lane (mini gel) for HRPO/ECL detection of the target proteins.

Note: The lyophilized cell lysates contain SDS and **are not recommended** for applications with native proteins such as Immunoprecipitation.

Storage:

Aliquote and store frozen.

Avoid repeated freeze/thaw cycles.

Shelf life: one year from despatch.

Pictures:

Detection of endogenous Topoisomerase

I: whole cell lysates of serum starved tumor cells (20.000 cells per lane) were applied to SDS-PAGE and transferred to PVDF membranes. Immunoblots were probed with TOP1 / SCL-70 antibody Cat.-No. AM00154PU-N (0.5 µg/ml) for 1h at RT and developed by ECL (exp. time: 30 sec). Lane 1: HeLa. Lane 2: HepG2. Lane 3: HEK-293. Lane 4: SH-SY5Y. Lane 5: MDCK. Lane 6: PC12. Lane 7: CMT-93. Lane 8: Neuro 2A. Lane 9: 3T3.

