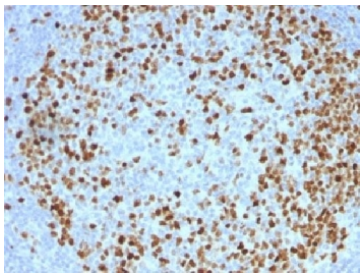
TOP2A Antibody / Chromosome Segregation Enzyme Antibody [clone TOP2A/1362] (V3442)

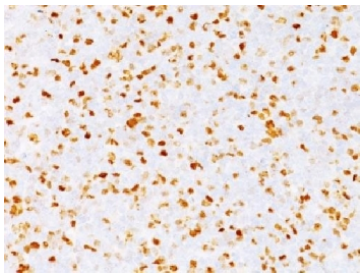
Catalog No.	Formulation	Size
V3442-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3442-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3442SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

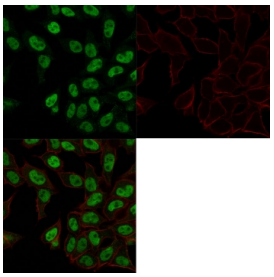
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b, kappa
Clone Name	TOP2A/1362
Purity	Protein G affinity chromatography
UniProt	P11388
Gene ID	7153
Localization	Nuclear
Applications	Western blot: 1-2ug/ml Immunofluorescence: 1-2ug/ml Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This TOP2A antibody is available for research use only.



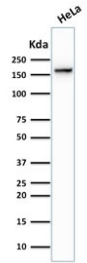
TOP2A Antibody Tonsil IHC. Immunohistochemistry analysis of FFPE human tonsil tissue demonstrates strong nuclear staining consistent with expression of the chromosome segregation enzyme DNA Topoisomerase II alpha in proliferating lymphoid cells. Nuclear immunoreactivity is concentrated within germinal center lymphocytes, reflecting the high mitotic activity of these cells during immune responses. The Chromosome Segregation Enzyme Antibody highlights proliferating germinal center B cells where mitotic chromosome segregation and chromatid decatenation are actively occurring, while surrounding mantle zone lymphocytes show minimal staining. Required HIER: boil tissue sections in pH 9 Tris-EDTA buffer for 10-20 min followed by cooling at RT for 20 min prior to immunohistochemistry staining.



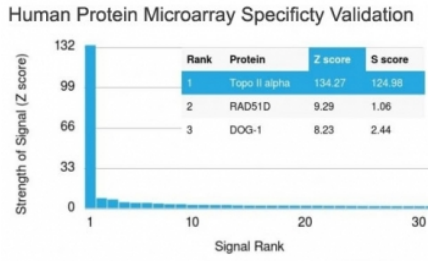
TOP2A Antibody Bladder Cancer IHC. Immunohistochemistry testing of FFPE human bladder carcinoma with TOP2A antibody (clone TOP2A/1362). Required HIER: boil sections in pH 9 10mM Tris with 1mM EDTA for 10-20 min followed by cooling at RT for 20 min.



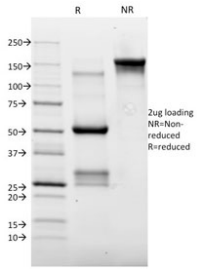
TOP2A Antibody HeLa IF. Immunofluorescence analysis of PFA-fixed human HeLa cells demonstrates strong nuclear staining of DNA Topoisomerase II alpha, a chromosome segregation enzyme that functions during mitosis to resolve DNA catenanes and enable sister chromatid separation. Green fluorescence highlights nuclear localization of the TOP2A protein in proliferating cells, consistent with its role in chromosome decatenation and mitotic chromosome segregation. Phalloidin staining (red) marks the actin cytoskeleton, outlining cell morphology and providing cytoplasmic reference while TOP2A signal remains predominantly nuclear. The Chromosome Segregation Enzyme Antibody enables visualization of the nuclear enzyme responsible for chromatid decatenation and proper chromosome partitioning during cell division in immunofluorescence assays.



TOP2A Antibody HeLa WB. Western blot analysis of human HeLa cell lysate following SDS-PAGE separation and membrane transfer demonstrates detection of DNA Topoisomerase II alpha. A band is detected at approximately 170-180 kDa, consistent with the predicted molecular weight of DNA Topoisomerase II alpha / TOP2A (~174 kDa). The signal corresponds to the chromosome segregation enzyme responsible for resolving DNA catenanes and enabling sister chromatid separation during mitosis. Detection of the denatured TOP2A protein band confirms the utility of this Chromosome Segregation Enzyme Antibody for western blot analysis of this essential mitotic enzyme in human cell lysates.



TOP2A Antibody Microarray Validation. HuProt human protein microarray specificity analysis using an array containing more than 19,000 full-length human proteins demonstrates highly selective recognition of DNA Topoisomerase II alpha by clone TOP2A/1362. The Chromosome Segregation Enzyme Antibody shows a dominant signal for the intended target TOP2A with a Z-score of 134.27 and S-score of 124.98, indicating exceptionally strong binding to DNA Topoisomerase II alpha relative to other proteins present on the array. These results confirm that this monoclonal antibody preferentially recognizes the chromosome segregation enzyme responsible for DNA decatenation and mitotic chromatid separation.
Z- and S-score explanation: The Z-score represents the strength of signal generated when the antibody, together with a fluorescently labeled secondary antibody, binds to a specific protein on the HuProt microarray. Z-scores are expressed as the number of standard deviations above the mean signal intensity across the entire protein array. When proteins on the array are ranked by decreasing Z-score, the S-score represents the difference between the Z-scores of neighboring ranked proteins. The S-score therefore reflects the relative specificity of an antibody for its intended target protein compared with other proteins present on the microarray.



SDS-PAGE analysis of purified, BSA-free TOP2A antibody (clone TOP2A/1362) as confirmation of integrity and purity.

Description

DNA topoisomerase II alpha (TOP2A) is a nuclear enzyme that regulates DNA topology during replication, transcription, and chromosome segregation. The protein belongs to the type II DNA topoisomerase family and introduces transient double strand DNA breaks that relieve torsional stress generated during DNA replication and chromatin condensation. One of the most critical biological roles of TOP2A occurs during mitosis where the enzyme resolves DNA entanglements that arise between duplicated chromosomes.

TOP2A antibody, also known as Topoisomerase II alpha antibody or DNA Topoisomerase II alpha antibody, recognizes a nuclear enzyme that functions as a key chromosome segregation enzyme during cell division. Following DNA replication, sister chromatids remain physically intertwined, forming DNA catenanes that must be resolved before chromosomes can separate. DNA Topoisomerase II alpha performs this essential decatenation step by introducing transient double strand breaks that allow DNA strands to pass through one another, enabling proper separation of sister chromatids.

TOP2A Antibody / Chromosome Segregation Enzyme Antibody (clone TOP2A/1362) is a mouse monoclonal antibody developed to detect this mitotic chromosome segregation enzyme. As a Chromosome Segregation Enzyme Antibody, clone TOP2A/1362 enables researchers to study the protein responsible for resolving intertwined chromatids and ensuring accurate chromosome partitioning during mitosis. Monoclonal antibodies provide specific recognition of the target protein, supporting reliable detection of this nuclear enzyme in experimental systems.

The designation Chromosome Segregation Enzyme Antibody distinguishes this antibody page from other TOP2A antibody pages that emphasize different biological contexts such as Topoisomerase II alpha antibody, DNA Topoisomerase II alpha antibody, or Cell Proliferation Marker Antibody. While those pages highlight enzymatic nomenclature or proliferation marker biology, this page focuses specifically on the role of TOP2A in mitotic chromosome separation and chromosome decatenation during cell division.

During mitosis, chromosomes must be completely disentangled before they can be segregated into daughter cells. DNA

Topoisomerase II alpha catalyzes the ATP dependent strand passage reactions required to separate intertwined DNA molecules. This decatenation activity is essential for chromosome segregation because unresolved DNA links between sister chromatids can lead to chromosome missegregation and genomic instability.

Because chromosome segregation is a fundamental step in the cell cycle, TOP2A expression is typically elevated in cells entering mitosis. Antibodies recognizing this enzyme therefore provide useful tools for studying mitotic chromosome dynamics, chromatid separation, and the molecular mechanisms that ensure accurate chromosome segregation during cell division. The Chromosome Segregation Enzyme Antibody clone TOP2A/1362 supports research investigating mitotic chromosome organization, DNA decatenation, and chromosome partitioning in proliferating cells.

Explore our Cancer Marker Antibodies page to discover additional antibodies for investigating cell proliferation, DNA replication, chromosome segregation, genomic stability, and tumor biology.

Application Notes

The concentration stated for each application is a general starting point. Variations in protocols, secondaries and substrates may require the TOP2A Antibody / Chromosome Segregation Enzyme Antibody to be titered up or down for optimal performance.

Immunogen

Amino acids 1352-1493 from the human protein were used as the immunogen for this TOP2A Antibody / Chromosome Segregation Enzyme Antibody.

Storage

Store the TOP2A antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

Topoisomerase II alpha antibody, DNA Topoisomerase II alpha antibody, DNA topoisomerase II antibody, Topoisomerase IIa antibody, TOP2A nuclear enzyme antibody

References (1)

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