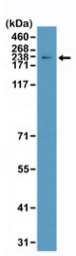
Topoisomerase II alpha Antibody / DNA Topology Enzyme Antibody [clone RM394] (R20410)

Catalog No.	Formulation	Size
R20410-0.1ML	Antibody in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ul

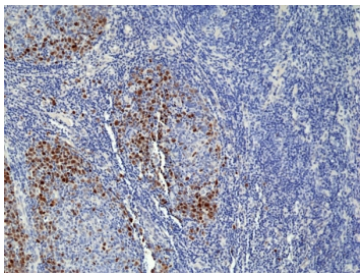
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM394
Purity	Protein A purified from animal origin-free supernatant
UniProt	P11388
Localization	Nuclear
Applications	Immunohistochemistry (FFPE) : 1:100-1:2000 Western Blot : 1:1000-1:2000
Limitations	This recombinant Topoisomerase II alpha antibody is available for research use only.



Topoisomerase II alpha Antibody / DNA Topology Enzyme Antibody (clone RM394). 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 detected protein corresponds to the DNA topology regulating enzyme responsible for resolving DNA supercoiling and other topological constraints that arise during DNA replication and transcription. Detection of the denatured TOP2A protein band supports the use of this DNA Topology Enzyme Antibody for western blot analysis of the enzyme that maintains proper DNA topology in human cell lysates.



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Description

DNA Topoisomerase II alpha (TOP2A) is a nuclear enzyme that plays a central role in regulating DNA topology during DNA replication, transcription, and chromosome organization. The protein belongs to the type II topoisomerase family and functions by introducing transient double strand DNA breaks that allow one DNA helix to pass through another. This ATP dependent strand passage reaction relieves torsional strain and prevents the accumulation of abnormal DNA topological structures within the genome.

Topoisomerase II alpha Antibody / DNA Topology Enzyme Antibody (clone RM394) recognizes the TOP2A protein, a nuclear enzyme widely known for controlling DNA topology in eukaryotic cells. TOP2A antibody, also referred to as DNA Topoisomerase II alpha antibody or TOP2A antibody, detects an enzyme that resolves DNA supercoiling generated as DNA strands are unwound during replication and transcription. Without proper regulation of DNA topology, excessive supercoiling and DNA entanglement can interfere with essential DNA metabolic processes.

As a DNA Topology Enzyme Antibody, clone RM394 supports research focused on the molecular mechanisms that control DNA topology and chromatin structure. DNA topology describes the structural configuration of DNA molecules, including supercoiling, knotting, and catenation events that occur as chromosomes undergo replication and transcription. DNA Topoisomerase II alpha regulates these topological states by transiently cleaving and rejoining DNA strands, allowing supercoiled DNA molecules to relax and restoring proper DNA topology within the nucleus.

The designation DNA Topology Enzyme Antibody differentiates this antibody page from other Topoisomerase II alpha antibody pages that emphasize different biological roles of the protein. While some TOP2A antibodies highlight the enzyme as a DNA replication enzyme, chromosome segregation enzyme, mitotic chromosome enzyme, or cell cycle regulator, this page specifically emphasizes the biochemical role of DNA Topoisomerase II alpha in regulating DNA topology. Structuring antibody pages around distinct biological functions such as DNA topology control is a powerful strategy antibody vendors use to ensure that multiple antibodies targeting the same protein are interpreted by search engines as separate research reagents rather than duplicate pages.

DNA topology must be tightly controlled in order to maintain genomic stability and ensure efficient DNA metabolic activity. DNA Topoisomerase II alpha resolves DNA supercoiling and removes topological constraints that accumulate as chromosomes undergo replication and transcription. Antibodies recognizing this DNA topology enzyme therefore support research investigating DNA supercoiling, chromatin topology regulation, and enzymatic mechanisms that maintain proper DNA structure in proliferating cells.

Application Notes

The stated application concentrations are suggested starting points. Titration of the Topoisomerase II alpha Antibody / DNA Topology Enzyme Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A peptide corresponding to human TOP2a was used as the immunogen for the Topoisomerase II alpha Antibody / DNA Topology Enzyme Antibody.

Storage

Store the recombinant Topoisomerase II alpha antibody at -20oC.

Alternate Names

TOP2A antibody, DNA Topoisomerase II alpha antibody, Topoisomerase IIa antibody, Topo II alpha antibody, DNA topology regulating enzyme antibody