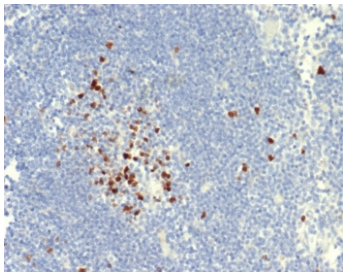
Topoisomerase II alpha Antibody / DNA Decatenation Enzyme Antibody [clone TOP2A/7169R] (V4497)

Catalog No.	Formulation	Size
V4497-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4497-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4497SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

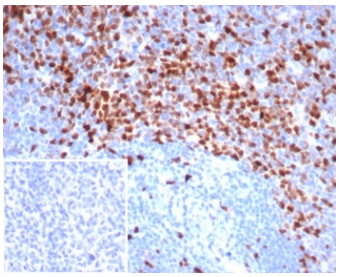
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Dog
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	TOP2A/7169R
Purity	Protein A/G affinity
UniProt	P11388
Localization	Nucleus
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 minutes at RT
Limitations	This Topoisomerase II alpha antibody is available for research use only.



Topoisomerase II alpha Antibody / DNA Decatenation Enzyme Antibody (clone TOP2A/7169R). Immunohistochemistry analysis of FFPE dog lymph node tissue demonstrates nuclear staining of DNA Topoisomerase II alpha in proliferating lymphoid cells. Nuclear immunoreactivity is enriched within germinal center lymphocytes, reflecting elevated expression of this DNA decatenation enzyme in rapidly dividing immune cells. As a DNA Decatenation Enzyme Antibody, clone TOP2A/7169R highlights cells in which DNA Topoisomerase II alpha catalyzes the decatenation of intertwined DNA molecules, resolving DNA catenanes generated during DNA replication and enabling proper chromatid separation during cell division. HIER: boil tissue sections in pH 9 Tris-EDTA buffer for 20 min followed by cooling at RT prior to immunohistochemistry staining.



Topoisomerase II alpha Antibody / DNA Decatenation Enzyme Antibody (clone TOP2A/7169R). Immunohistochemistry analysis of FFPE human tonsil tissue demonstrates strong nuclear staining of DNA Topoisomerase II alpha in proliferating lymphoid cells. Nuclear immunoreactivity is most prominent within germinal center lymphocytes, reflecting elevated expression of this DNA decatenation enzyme in rapidly dividing immune cells. As a DNA Decatenation Enzyme Antibody, clone TOP2A/7169R highlights cells in which DNA Topoisomerase II alpha catalyzes DNA decatenation, resolving DNA catenanes generated during DNA replication and enabling proper chromatid separation during cell division. Inset: PBS used in place of primary antibody as a negative control. HIER: boil tissue sections in pH 9 Tris-EDTA buffer for 20 min followed by cooling at RT prior to immunohistochemistry staining.

Description

DNA Topoisomerase II alpha (TOP2A) is a nuclear enzyme that plays a critical role in DNA decatenation, the process required to separate intertwined DNA molecules generated during DNA replication. 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 mechanism enables the enzyme to resolve DNA catenanes and restore proper chromosome structure within the nucleus.

Topoisomerase II alpha Antibody / DNA Decatenation Enzyme Antibody (clone TOP2A/7169R) recognizes the TOP2A protein, a nuclear enzyme widely known for catalyzing DNA decatenation of replicated chromosomes. TOP2A antibody, also referred to as DNA Topoisomerase II alpha antibody or TOP2A antibody, detects an enzyme responsible for unlinking intertwined DNA molecules that arise as sister chromatids are duplicated during DNA replication. These DNA catenanes must be removed before chromosomes can be properly organized and separated during cell division.

As a DNA Decatenation Enzyme Antibody, clone TOP2A/7169R supports research focused specifically on molecular mechanisms that remove DNA catenanes. DNA decatenation occurs when Topoisomerase II alpha transiently cleaves both strands of a DNA duplex, passes another DNA helix through the break, and then reseals the DNA. This catalytic reaction resolves topological links between replicated chromosomes and allows proper chromosome architecture to be restored.

The designation DNA Decatenation Enzyme Antibody differentiates this antibody page from other Topoisomerase II alpha antibody pages that emphasize alternative biological roles of the protein. While some TOP2A antibodies highlight the enzyme as a DNA replication enzyme, chromosome segregation enzyme, DNA topology enzyme, mitotic chromosome enzyme, or genome stability enzyme, this page specifically emphasizes the biochemical function of DNA Topoisomerase II alpha in DNA decatenation. Structuring antibody pages around distinct enzymatic functions such as DNA decatenation 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 decatenation is essential for maintaining chromosome integrity during cell division. If DNA catenanes are not properly resolved, sister chromatids remain physically linked and chromosomes cannot separate correctly during mitosis. DNA Topoisomerase II alpha therefore functions as the primary enzyme responsible for removing these DNA catenanes and ensuring proper chromatid disentanglement. Antibodies recognizing this DNA decatenation enzyme support research investigating chromosome decatenation, chromatid separation mechanisms, and molecular pathways controlling DNA catenane resolution during cell division.

Application Notes

Optimal dilution of the Topoisomerase II alpha Antibody / DNA Decatenation Enzyme Antibody should be determined by the researcher.

Immunogen

A recombinant partial protein sequence (within amino acids 1431-1531) from the human protein was used as the immunogen for the Topoisomerase II alpha Antibody / DNA Decatenation Enzyme Antibody.

Storage

Aliquot the Topoisomerase II alpha antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

TOP2A antibody, DNA Topoisomerase II alpha antibody, Topoisomerase IIa antibody, Topo II alpha antibody, DNA decatenation enzyme antibody