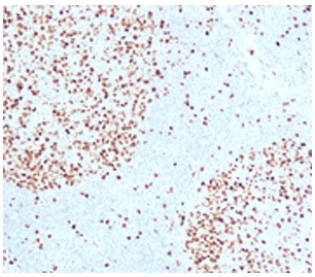
TOP2A Antibody / DNA Replication Enzyme Antibody [clone TPM2A-1] (V7245)

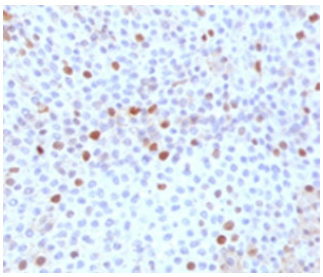
Catalog No.	Formulation	Size
V7245-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V7245-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V7245SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

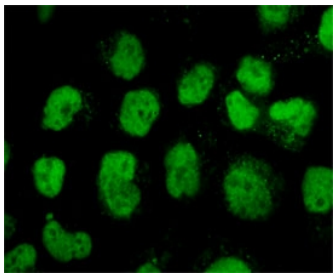
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b, kappa
Clone Name	TPM2A-1
Purity	Protein G affinity chromatography
UniProt	P11388
Gene ID	7153
Localization	Nuclear
Applications	Immunofluorescence : 1-2ug/ml Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml (1)
Limitations	This TOP2A antibody is available for research use only.



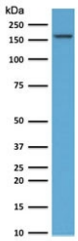
TOP2A Antibody / DNA Replication Enzyme Antibody (clone TPM2A-1). Immunohistochemistry analysis of FFPE human tonsil tissue demonstrates strong nuclear staining consistent with expression of DNA Topoisomerase II alpha, a DNA replication enzyme required for resolving topological stress during DNA synthesis. Nuclear immunoreactivity is concentrated within germinal center lymphocytes, reflecting the high DNA replication activity of these rapidly proliferating immune cells. The DNA Replication Enzyme Antibody highlights cells undergoing active DNA synthesis where replication forks generate torsional strain that must be resolved by DNA Topoisomerase II alpha. Surrounding mantle zone lymphocytes show comparatively reduced staining, consistent with lower DNA replication activity in these cells.



IHC testing of FFPE human bladder carcinoma with TOP2A antibody (clone TPM2A-1).



TOP2A Antibody / DNA Replication Enzyme Antibody (clone TPM2A-1). Immunofluorescence analysis of PFA-fixed human HeLa cells demonstrates strong nuclear staining of DNA Topoisomerase II alpha, a DNA replication enzyme required for resolving torsional stress generated during DNA synthesis. Green fluorescence highlights nuclear localization of TOP2A in proliferating cells where active DNA replication and replication fork progression are occurring. As a DNA Replication Enzyme Antibody, clone TPM2A-1 enables visualization of the nuclear enzyme responsible for maintaining DNA topology during genome duplication, supporting studies of replication dynamics and DNA synthesis in dividing cells.



TOP2A Antibody / DNA Replication Enzyme Antibody (clone TPM2A-1). 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 band corresponds to the DNA replication enzyme responsible for resolving topological stress generated during DNA synthesis and replication fork progression. Detection of the denatured TOP2A protein band supports the use of this DNA Replication Enzyme Antibody for western blot analysis of DNA Topoisomerase II alpha in human cell lysates.

Description

DNA Topoisomerase II alpha (TOP2A) is a nuclear enzyme that regulates DNA topology during DNA replication and chromatin duplication. 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, relieving torsional stress generated during DNA synthesis. This activity is essential for maintaining DNA replication efficiency and genomic stability in proliferating cells.

TOP2A antibody, also known as Topoisomerase II alpha antibody or DNA Topoisomerase II alpha antibody, recognizes a nuclear enzyme widely regarded as a DNA replication enzyme because of its central role in replication fork progression and DNA synthesis. During S phase of the cell cycle, the movement of replication forks generates extensive DNA supercoiling ahead of the replication machinery. DNA Topoisomerase II alpha resolves these topological constraints, preventing replication fork stalling and allowing continued DNA strand elongation during genome duplication.

TOP2A Antibody / DNA Replication Enzyme Antibody (clone TPM2A-1) is a mouse monoclonal antibody developed to detect the nuclear enzyme responsible for relieving torsional strain generated during DNA replication. As a DNA Replication Enzyme Antibody, clone TPM2A-1 supports investigation of DNA replication dynamics, replication fork progression, and the molecular mechanisms that maintain efficient DNA synthesis during cell division. Monoclonal antibodies targeting this replication enzyme enable visualization of TOP2A protein expression in proliferating cells undergoing active DNA replication.

The designation DNA Replication Enzyme Antibody differentiates this TOP2A antibody page from other TOP2A antibody pages that emphasize alternative biological roles of the protein. While some TOP2A antibodies are described as Topoisomerase II alpha antibodies, chromosome segregation enzyme antibodies, or cell proliferation marker antibodies, this antibody page specifically highlights the enzyme's role in replication fork progression and DNA topology control during DNA replication. Structuring antibody pages around these biological roles is a powerful differentiation strategy used by antibody vendors to ensure multiple antibodies targeting the same protein are interpreted by search engines as distinct research reagents.

DNA Topoisomerase II alpha activity increases dramatically in cells entering S phase and remains elevated during periods of active DNA synthesis. Because the enzyme resolves DNA supercoiling generated by rapidly moving replication forks, TOP2A is essential for successful genome duplication. Antibodies recognizing this DNA replication enzyme therefore support research investigating replication stress responses, DNA synthesis regulation, and mechanisms that preserve genome integrity during cell proliferation.

Application Notes

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

1. Staining of FFPE tissue requires boiling sections in pH 9 10mM Tris with 1mM EDTA for 10-20 min followed by cooling at RT for 20 min.

Immunogen

Human recombinant partial protein (amino acids 1352-1493) was used as the immunogen for this TOP2A Antibody / DNA Replication 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, TOP2 antibody, Topoisomerase IIa antibody, DNA decatenation enzyme antibody

References (1)