abcam

ab109524

Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody [EPR5377]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 9.85% Tris glycine, 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR5377
Purification technique	Affinity purification Protein A
Concentration	0.182 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Rat, Mouse, Human, Synthetic peptide
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

WB

Tested

Species	Synthetic peptide
Dilution info	1/10000 - 1/50000
Notes	-

Species	Mouse
Dilution info	1/10000 - 1/50000
Notes	-

Species	Rat
Dilution info	1/10000 - 1/50000
Notes	-

Species	Human

Dilution info	1/10000 - 1/50000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

Target data

See full target information DNA topoisomerase 2-beta

Function	Key decatenating enzyme that alters DNA topology by binding to two double-stranded DNA molecules, generating a double-stranded break in one of the strands, passing the intact strand through the broken strand, and religating the broken strand. Plays a role in B-cell differentiation.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Stable for 12 months at -20°C

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Topoisomerase II alpha and Topoisomerase II beta also known as TOP2A and TOP2B are enzymes with a vital role in modulating the topological states of DNA. They actively introduce transient double-strand breaks in the DNA helix to manage DNA tangling and supercoiling during replication and transcription. TOP2A has a molecular weight of approximately 170 kilodaltons while TOP2B weighs around 180 kilodaltons. High levels of TOP2A are observed in proliferating cells such as those in the thymus and testis while TOP2B is expressed in nearly all tissues indicating its ubiquitous nature.
Biological function summary	These enzymes participate in fundamental cellular processes including chromosomal segregation replication and transcription. They function in the context of large protein complexes rather than in isolation. TOP2A is often engaged during mitosis due to its cell cycle-dependent expression. In contrast TOP2B's functions spread across various DNA-related actions such as differentiation and development. This distribution emphasizes their respective regulatory roles in both proliferating and resting cells.
Pathways	TOP2A and TOP2B integrate into critical pathways like the DNA replication and repair pathways. As a notable component of these pathways TOP2A interacts closely with proteins like MCM2-7 and ORC complex for replication origin unwinding while TOP2B shares interactions with factors like RNA polymerase II for transcription-related activities. These interactions reflect their involvement in maintaining genomic stability across different cellular conditions.
Associated diseases and disorders	Aberrations in TOP2A expression or function link closely to numerous cancers reflecting its role in cell proliferation. Furthermore mutations or dysregulation of TOP2B have implications in disorders related to neural development highlighting its role beyond cellular growth control. Other related proteins like BRCA1 also display interactions with TOP2A reinforcing the enzyme's involvement in cancer-related pathways whereas TOP2B’s association with proteins like TAF(II)250 suggests a broader involvement in transcription processes relevant to neural disorders.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

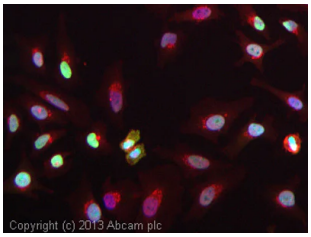
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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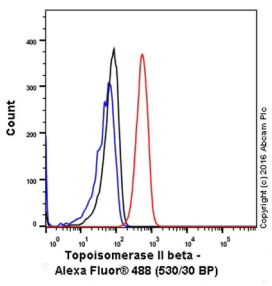
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody [EPR5377] (ab109524)

Topoisomerase II alpha + Topoisomerase II beta/TOP2B Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody

ICC/IF image of ab109524 stained HeLa cells. The cells were 4% Formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab109524, 10µg/ml) overnight at +4°C. The secondary antibody (green) was ab96899, DyLight® 488 goat anti-rabbit IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

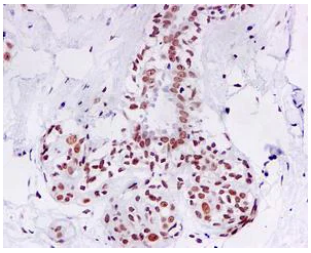


Flow Cytometry (Intracellular) - Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody [EPR5377] (ab109524)

Topoisomerase II alpha + Topoisomerase II beta/TOP2B Flow Cytometry (Intracellular) staining using rabbit Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody

ab109524 staining Topoisomerase II alpha + Topoisomerase II beta in the human cell line HeLa (human cervix adenocarcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde, permiabilised with 90% methanol and the sample was incubated with the primary antibody at a dilution of 1/20. A goat anti rabbit IgG (Alexa Fluorr® 488) at a dilution of 1/2000 was used as the secondary antibody.
Isoytype control: Rabbit monoclonal IgG (Black)

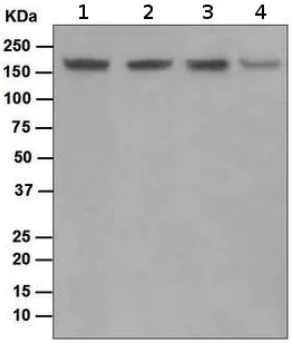
Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody [EPR5377] (ab109524)

Topoisomerase II alpha + Topoisomerase II beta/TOP2B Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody

ab109524, at a 1/100 dilution, staining Human Topoisomerase II alpha + Topoisomerase II beta in breast tissue, using Immunohistochemistry, Formalin/PFA-fixed paraffin-embedded tissue. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Western blot - Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody [EPR5377] (ab109524)

All lanes:
Western blot - Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody [EPR5377] (ab109524) at 1/50000 dilution

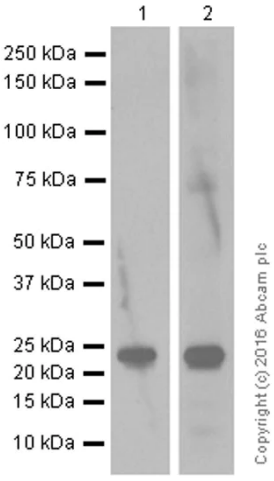
Lane 1:
Jurkat cell lysate at 10 µg

Lane 2:
K562 cell lysate at 10 µg

Lane 3:
Raw264.7 cell lysate at 10 µg

Lane 4:
PC-12 cell lysate at 10 µg

Observed band size: 180 kDa



Western blot - Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody [EPR5377] (ab109524)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
TOP II alpha recombinant protein (aa 1-220) containing a his-tag.

All lanes:
Western blot - Anti-Topoisomerase II alpha + Topoisomerase II beta/TOP2B antibody [EPR5377] (ab109524) at 1/1000 dilution

Lane 1:
ab109524 on TOP II alpha recombinant protein 10ng

Lane 2:
Anti-His rabbit serum on TOP II alpha recombinant protein 10ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 24 kDa

Exposure time: 1s

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.