abcam

ab252945

Anti-TPX2 antibody [EPR23180-4]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR23180-4
Purification technique	Affinity purification Protein A
Concentration	0.481 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/4000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information TPX2

Function	Spindle assembly factor required for normal assembly of mitotic spindles. Required for normal assembly of microtubules during apoptosis. Required for chromatin and/or kinetochore dependent microtubule nucleation. Mediates AURKA localization to spindle microtubules (PubMed:18663142, PubMed:19208764, PubMed:37728657). Activates AURKA by promoting its autophosphorylation at 'Thr-288' and protects this residue against dephosphorylation (PubMed:18663142, PubMed:19208764). TPX2 is inactivated upon binding to importin-alpha (PubMed:26165940). At the onset of mitosis, GOLGA2 interacts with importin-alpha, liberating TPX2 from importin-alpha, allowing TPX2 to activate AURKA kinase and stimulate local microtubule nucleation (PubMed:26165940).

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	Avoid freeze / thaw cycle

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	The Targeting Protein for Xklp2 (TPX2) also known as Microtubule-Associated Protein Required for Spindle acts mechanically in the assembly of mitotic spindles. With a molecular mass of approximately 82 kDa TPX2 localizes to the nucleus in interphase and distributes along the spindle microtubules during mitosis. Its expression is high in actively dividing cells such as those found in developing tissues and proliferative zones. This association with microtubules positions TPX2 as a critical player in cell division.
Biological function summary	TPX2 contributes to the proper regulation and progression of mitosis. As part of the mitotic spindle apparatus TPX2 interacts with other spindle assembly factors to facilitate the nucleation and stabilization of microtubules. It orchestrates the proper arrangement of spindle poles ensuring accurate chromosome segregation.

	TPX2 operates within a complex that includes proteins such as Aurora A kinase which further accentuates its role in spindle dynamics and mitotic progression.
Pathways	TPX2 interacts intricately with the cell cycle and mitotic spindle checkpoint pathways. As an important regulator in these pathways it works alongside proteins like Aurora A kinase and Eg5 to control spindle formation and function which are necessary for the G2/M phase transition. These pathways ensure that cell division proceeds only when all chromosomal alignments and spindle assemblies meet the required fidelity underlining the importance of TPX2 in maintaining genomic stability.
Associated diseases and disorders	The overexpression of TPX2 often correlates with several types of cancer including breast and pancreatic cancers. Aberrant TPX2 levels disturb normal mitosis contributing to aneuploidy and tumor progression. Furthermore TPX2 overactivity can interact with oncogenic proteins such as MYC enhancing tumorigenic potential. Understanding TPX2's role in these diseases offers potential targets for therapeutic intervention making it an important subject of study in cancer research.

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

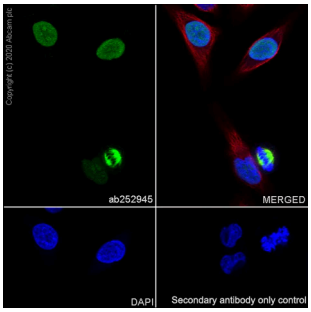
We do not recommend this combination. It is not covered by our product promise.

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.

Full details and terms and conditions can be found here:
Terms & Conditions.

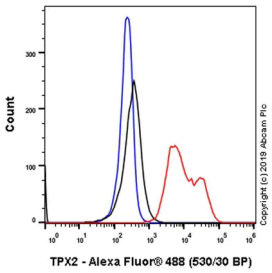
9 product images



Immunocytochemistry/ Immunofluorescence - Anti-TPX2 antibody [EPR23180-4] (ab252945)

TPX2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TPX2 antibody

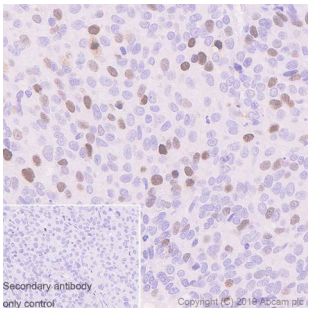
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa cells labeling TPX2 with ab252945 at 1/100 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing positive staining in HeLa cells. ab195889 Anti-alpha Tubulin antibody (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-TPX2 antibody [EPR23180-4] (ab252945)

TPX2 Flow Cytometry (Intracellular) staining using rabbit Anti-TPX2 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Raji (Human Burkitt's lymphoma B lymphocyte) cells labeling TPX2 with ab252945 at 1/500 (Red) compared with a Rabbit monoclonal IgG (ab172730) / Black isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

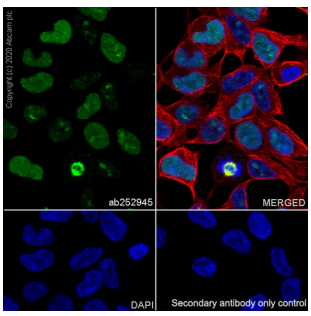


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPX2 antibody [EPR23180-4] (ab252945)

TPX2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPX2 antibody

Immunohistochemical analysis of paraffin-embedded human breast cancer tissue labeling TPX2 with ab252945 at 1/4000 followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Positive staining in proliferative cells of human breast cancer is observed (PMID:31494045). The section was incubated with ab252945 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

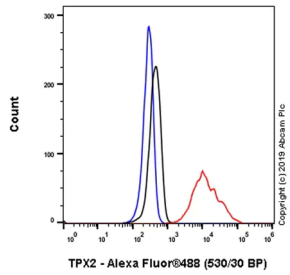


Immunocytochemistry/ Immunofluorescence - Anti-TPX2 antibody [EPR23180-4] (ab252945)

TPX2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TPX2 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HEK-293 cells labeling TPX2 with ab252945 at 1/100 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing positive staining in HEK-293 cells. ab195889 Anti-alpha Tubulin antibody (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The nuclear counterstain was DAPI (Blue).

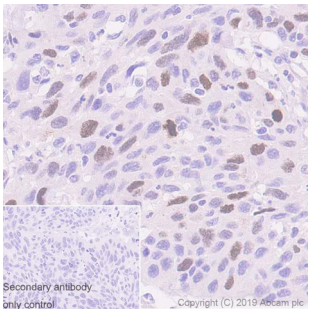
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-TPX2 antibody [EPR23180-4] (ab252945)

TPX2 Flow Cytometry (Intracellular) staining using rabbit Anti-TPX2 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling TPX2 with ab252945 at 1/500 (Red) compared with a Rabbit monoclonal IgG (ab172730) / Black isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

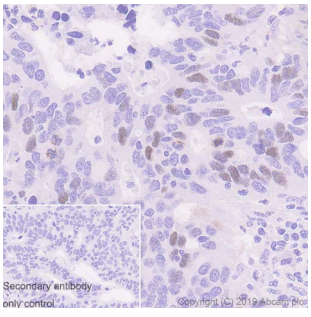


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPX2 antibody [EPR23180-4] (ab252945)

TPX2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPX2 antibody

Immunohistochemical analysis of paraffin-embedded human lung cancer tissue labeling TPX2 with ab252945 at 1/4000 followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Positive staining in proliferative cells of human lung cancer tissue is observed (PMID:23634259, 16489064). The section was incubated with ab252945 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

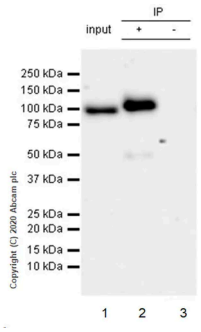


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPX2 antibody [EPR23180-4] (ab252945)

TPX2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPX2 antibody

Immunohistochemical analysis of paraffin-embedded human colon cancer tissue labeling TPX2 with ab252945 at 1/4000 followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Positive staining in proliferative cells of human colon cancer is observed(PMID:23634259, 22207630). The section was incubated with ab252945 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunoprecipitation - Anti-TPX2 antibody [EPR23180-4] (ab252945)

TPX2 was immunoprecipitated from 0.35 mg Raji (human Burkitt's lymphoma B lymphocyte) whole cell lysate with ab252945 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab252945 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: Raji whole cell lysate 10 µg.

Lane 2: ab252945 IP in Raji whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab252945 in Raji whole cell lysate.

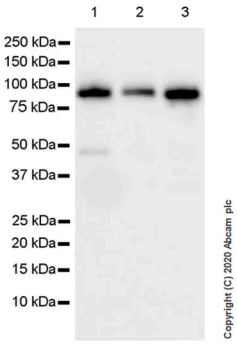
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 41 secs.

All lanes:
Immunoprecipitation - Anti-TPX2 antibody [EPR23180-4] (ab252945)

Predicted band size: 47 kDa, 86 kDa

Observed band size: 100 kDa



Western blot - Anti-TPX2 antibody [EPR23180-4] (ab252945)

TPX2 Western blot staining using rabbit Anti-TPX2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID:25239289, 16489064).

Lysates should be made freshly and used in WB immediately to minimize protein degradation.

Exposure time: 5 secs.

All lanes:
Western blot - Anti-TPX2 antibody [EPR23180-4] (ab252945) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Lane 2:
HEK-293 (human embryonic kidney epithelial cell), whole cell lysate at 20 µg

Lane 3:
Raji (human Burkitt's lymphoma B lymphocyte), whole cell lysate at 20 µg

Secondary

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

Predicted band size: 86 kDa

Observed band size: 100 kDa

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