abcam

ab92305

Anti-TPPP antibody [EPR3316]

Recombinant | RabMAb | 20ul selling size

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	EPR3316
Purification technique	Affinity purification Protein A
Concentration	0.28 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/50
Notes	**For unpurified use at 1/250 - 1/500.** Perform heat-mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/50
Notes	**For unpurified use at 1/250 - 1/500.** Perform heat-mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

Species	Human
Dilution info	1/50
Notes	**For unpurified use at 1/250 - 1/500.** Perform heat-mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

WB

Tested

Species	Mouse
Dilution info	1/10000
Notes	**For unpurified use at 1/500 - 1/1000.**

Species	Rat
Dilution info	1/10000
Notes	**For unpurified use at 1/500 - 1/1000.**

Species	Human
Dilution info	1/10000
Notes	**For unpurified use at 1/500 - 1/1000.**

ICC/IF

Tested

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

Species	Human
Dilution info	1/100 - 1/250

Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/20 - 1/50
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Species	Human
Dilution info	1/20 - 1/50
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information TPPP

Function	Regulator of microtubule dynamics that plays a key role in myelination by promoting elongation of the myelin sheath (PubMed:31522887). Acts as a microtubule nucleation factor in oligodendrocytes: specifically localizes to the postsynaptic Golgi apparatus region, also named Golgi outpost, and promotes microtubule nucleation, an important step for elongation of the myelin sheath (PubMed:31522887, PubMed:33831707). Required for both uniform polarized growth of distal microtubules as well as directing the branching of proximal processes (PubMed:31522887). Shows magnesium-dependent GTPase activity; the

role of the GTPase activity is unclear (PubMed:21316364, PubMed:21995432). In addition to microtubule nucleation activity, also involved in microtubule bundling and stabilization of existing microtubules, thereby maintaining the integrity of the microtubule network (PubMed:17105200, PubMed:17693641, PubMed:18028908, PubMed:26289831). Regulates microtubule dynamics by promoting tubulin acetylation: acts by inhibiting the tubulin deacetylase activity of HDAC6 (PubMed:20308065, PubMed:23093407). Also regulates cell migration: phosphorylation by ROCK1 inhibits interaction with HDAC6, resulting in decreased acetylation of tubulin and increased cell motility (PubMed:23093407). Plays a role in cell proliferation by regulating the G1/S-phase transition (PubMed:23355470). Involved in astral microtubule organization and mitotic spindle orientation during early stage of mitosis; this process is regulated by phosphorylation by LIMK2 (PubMed:22328514).

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, 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	TPPP also known as Tubulin Polymerization Promoting Protein or p25 is a small protein with an approximate mass of 25 kDa. TPPP is expressed mainly in the brain particularly abundant in oligodendrocytes. This protein plays an important role in regulating the polymerization of tubulin into microtubules. Through its binding to tubulin TPPP stabilizes microtubule structures facilitating proper microtubule assembly and maintenance. The modulation of these structures is essential for cellular operations like intracellular transport and cell division.
Biological function summary	The protein participates in the dynamics of cytoskeletal elements critical for maintaining cell shape and function. TPPP is part of cytoskeletal networks where it contributes to cellular integrity in neurons. TPPP's activity influences the formation and maintenance of myelin the insulating layer enveloping nerve fibers which is important for fast and efficient nerve impulse conduction. In its role TPPP interacts cooperatively with other cytoskeletal proteins enhancing microtubule resilience and cell structural stability.
Pathways	TPPP interacts in processes involving microtubule organization and stabilization. It is integral in the MAPK/ERK signaling pathway which is prominent in regulating cellular processes like proliferation and differentiation. Additionally TPPP may interplay with proteins such as MAP2 and Tau both involved in the MAP-kinase pathways regulating microtubule dynamics indicating a collaborative network in cellular signaling and structural reinforcement in neural cells.
Associated diseases and disorders	TPPP has correlations with neurodegenerative diseases such as Parkinson's and Alzheimer's diseases. Abnormal regulation or aggregation of TPPP is linked to the formation of pathological protein inclusions found in these conditions. The interaction between TPPP and Alpha-synuclein is particularly notable as TPPP may regulate or enhance the aggregation of Alpha-synuclein contributing to the development of Lewy bodies in Parkinson's. Understanding these interactions and pathways is essential for developing therapeutic strategies targeting these neurodegenerative 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

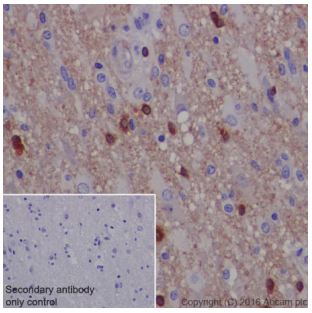
We do not recommend this combination. It is not covered by our product promise.

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.

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

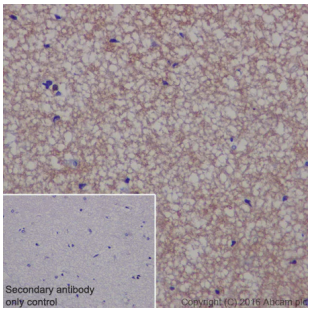
11 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPPP antibody [EPR3316] (ab92305)

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

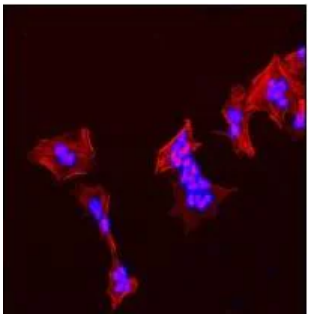
Immunohistochemical analysis of paraffin-embedded human glioma tissue sections labelling TPPP with purified ab92305 at dilution of 1/50. The secondary antibody used was ab97051; a goat anti-rabbit IgG H&L (HRP) at dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPPP antibody [EPR3316] (ab92305)

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

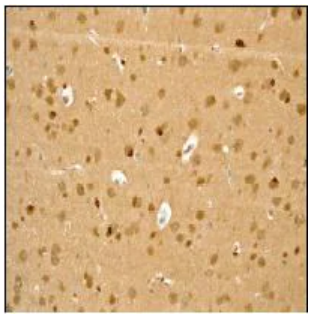
Immunohistochemical analysis of paraffin-embedded human cerebral cortex tissue sections labelling TPPP with purified ab92305 at dilution of 1/50. The secondary antibody used was ab97051; a goat anti-rabbit IgG H&L (HRP) at dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.



Immunocytochemistry/ Immunofluorescence - Anti-TPPP antibody [EPR3316] (ab92305)

TPPP Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TPPP antibody

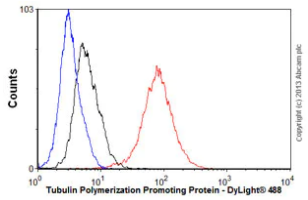
ab92305 at 1/100 dilution staining TPPP in SH-SY5Y cells, by immunofluorescence.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPPP antibody [EPR3316] (ab92305)

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

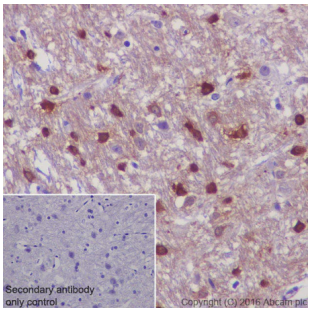
ab92305 at 1/250 dilution staining TPPP in paraffin-embedded Human brain tissue by immunohistochemistry.
Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-TPPP antibody [EPR3316] (ab92305)

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

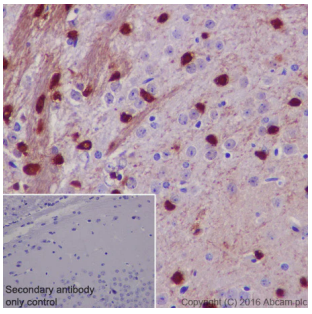
Overlay histogram showing SH-SY5Y cells stained with ab92305 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab92305, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPPP antibody [EPR3316] (ab92305)

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

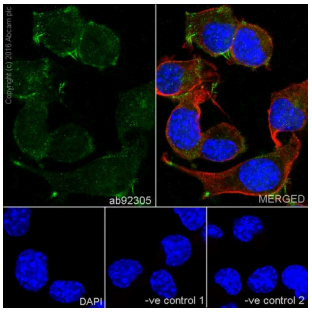
Immunohistochemical analysis of paraffin-embedded rat cerebral cortex tissue sections labelling TPPP with purified ab92305 at dilution of 1/50. The secondary antibody used was ab97051; a goat anti-rabbit IgG H&L (HRP) at dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPPP antibody [EPR3316] (ab92305)

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

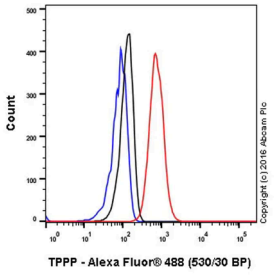
Immunohistochemical analysis of paraffin-embedded mouse cerebral cortex tissue sections labelling TPPP with purified ab92305 at dilution of 1/50. The secondary antibody used was ab97051; a goat anti-rabbit IgG H&L (HRP) at dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.



Immunocytochemistry/ Immunofluorescence - Anti-TPPP antibody [EPR3316] (ab92305)

TPPP Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TPPP antibody

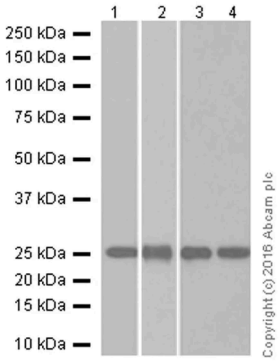
Immunocytochemistry/Immunofluorescence staining of Neuro-2a (mouse neuroblastoma) cells labelling TPPP with purified ab92305 at a working dilution of 1/100. The secondary antibody was Alexa Fluor® 488 goat anti-rabbit (ab150077), used at a dilution of 1/1000. ab7291, a mouse anti-tubulin antibody (1/1000), was used to stain tubulin along with ab150120 (Alexa Fluor® 594 goat anti-mouse, 1/1000), shown in the top right hand panel. DAPI was used as nuclear counterstain. The cells were fixed in 4% Paraformaldehyde and permeabilized using 0.1% Triton X-100. The negative controls are shown in bottom middle and right hand panels - for negative control 1, rabbit primary antibody was used followed by an Alexa Fluor® 594 goat anti-mouse antibody (ab150120). For negative control 2, ab7291 (mouse anti-tubulin) was used followed by an Alexa Fluor® 488 goat anti-rabbit secondary (ab150077).



Flow Cytometry (Intracellular) - Anti-TPPP antibody [EPR3316] (ab92305)

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

Overlay histogram showing 4% paraformaldehyde fixed Neuro-2a (mouse neuroblastoma) cells labelling TPPP with purified ab92305 at dilution of 1/20. The secondary antibody used was Alexa Fluor® 488 goat-anti-rabbit IgG at dilution of 1/2000. A non-specific IgG antibody (rabbit monoclonal) was used as isotype control (black line). The blue line shows cells without incubation with primary antibody and secondary antibody.



Western blot - Anti-TPPP antibody [EPR3316] (ab92305)

TPPP Western blot staining using rabbit Anti-TPPP antibody

Blocking/Diluting buffer 5% NFDM /TBST
All lanes:
Western blot - Anti-TPPP antibody [EPR3316] (ab92305) at 1/10000 dilution

Lane 1:
Human cerebellum tissue lysate at 20 µg

Lane 2:
Mouse brain tissue lysate at 20 µg

Lane 3:
Mouse cerebral cortex tissue lysate at 20 µg

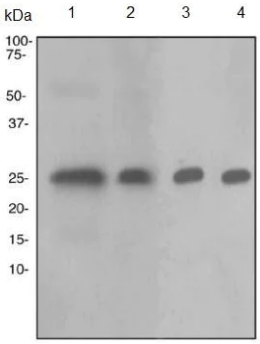
Lane 4:
Rat brain tissue lysate at 20 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/2000 dilution

Predicted band size: 23 kDa

Observed band size: 25 kDa



Western blot - Anti-TPPP antibody [EPR3316] (ab92305)

TPPP Western blot staining using rabbit Anti-TPPP antibody

All lanes:
Western blot - Anti-TPPP antibody [EPR3316] (ab92305) at 1/1000 dilution

Lane 1:
Fetal brain lysate at 10 µg

Lane 2:
SHSY5Y cell lysate at 10 µg

Lane 3:
Mouse brain lysate at 10 µg

Lane 4:
Rat brain lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit antibody at 1/2000 dilution

Predicted band size: 23 kDa

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