abcam

ab193842

Alexa Fluor® 488 Anti-TDP43 antibody [EPR5810]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR5810
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human

Dilution info	1 µg/mL
Notes	This product gave a positive signal in Hek293 cells fixed with 100% methanol (5 min). This antibody is suitable to detect TDP43 using MeOH fixation in ICC.We have compared methanol and paraformaldehyde (PFA) fixation methods with this product and recommend to use methanol only.

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

IHC-P

Expected

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

Target data

See full target information TARDBP

Function	RNA-binding protein that is involved in various steps of RNA biogenesis and processing (PubMed:23519609). Preferentially binds, via its two RNA recognition motifs RRM1 and RRM2, to GU-repeats on RNA molecules predominantly localized within long introns and in the 3'UTR of mRNAs (PubMed:23519609, PubMed:24240615, PubMed:24464995). In turn, regulates the splicing of many non-coding and protein-coding RNAs including proteins involved in neuronal survival, as well as mRNAs that encode proteins relevant for neurodegenerative diseases (PubMed:21358640, PubMed:29438978). Plays a role in maintaining mitochondrial homeostasis by regulating the processing of mitochondrial transcripts (PubMed:28794432). Also regulates mRNA stability by recruiting CNOT7/CAF1 deadenylase on mRNA 3'UTR leading to poly(A) tail deadenylation and thus shortening (PubMed:30520513). In response to oxidative insult, associates with stalled ribosomes localized to stress granules (SGs) and contributes to cell survival (PubMed:19765185, PubMed:23398327). Also participates in the normal skeletal muscle formation and regeneration, forming cytoplasmic myo-granules and binding mRNAs that encode sarcomeric proteins (PubMed:30464263). Plays a role in the maintenance of the circadian clock periodicity via stabilization of the CRY1 and CRY2 proteins in a FBXL3-dependent manner (PubMed:27123980). Negatively regulates the expression of CDK6 (PubMed:19760257). Regulates the expression of HDAC6, ATG7 and VCP in a PPIA/CYPA-dependent manner (PubMed:25678563).

Storage

Shipped at conditions	Blue Ice
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, Store in the dark

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.

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Supplementary info

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

Activity summary	TDP43 also known as TAR DNA-binding protein 43 is a protein of approximately 43 kDa. It plays a role in various cellular processes primarily by binding to DNA and RNA. Researchers find TDP43 expressed mainly in neuronal tissues but it is present in other cell types as well. Known for its involvement in regulating gene expression and mRNA stability TDP43 interacts with other proteins within the nuclear compartment. The full function and activities of TDP43 are still under exploration but its importance in normal cellular functions is well recognized.
Biological function summary	TDP43 acts as a regulator of RNA splicing and transcription by forming ribonucleoprotein complexes. The protein can bind to specific sequences in RNA helping in the proper processing and transport of mRNA. Furthermore TDP43 has a role in stress granule formation a cell response to stress. Researchers have identified that the protein undergoes various post-translational modifications which could influence its behavior and function within the cellular environment.
Pathways	Several important pathways include TDP43 due to its functions in RNA metabolism. This protein contributes to the spliceosomal cycle and other pathways involved in mRNA processing. TDP43 interacts with proteins such as FUS and hnRNP which are also involved in RNA splicing and are essential for maintaining mRNA integrity. These relations make TDP43 an important player in regulating gene expression and protein synthesis.
Associated diseases and disorders	The association of TDP43 with neurodegenerative diseases is significant. Its abnormal aggregation is linked to amyotrophic lateral sclerosis (ALS) and frontotemporal lobar degeneration (FTLD). In these diseases TDP43 forms insoluble inclusions within neurons and glial cells. This mislocalization and aggregation can disrupt normal cellular function leading to cell death. In the context of ALS TDP43 often associates with proteins like SOD1 which are implicated in disease pathogenesis highlighting its role in neurodegeneration.

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

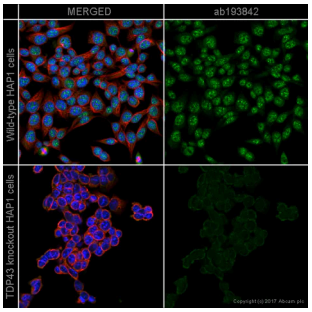
We do not recommend this combination. It is not covered by our product promise.

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.

3 product images

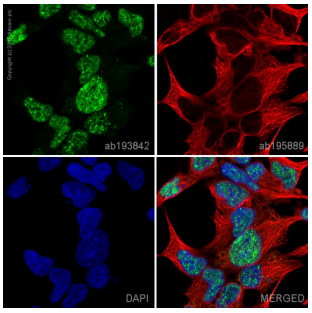


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 488 Anti-TDP43 antibody [EPR5810] (ab193842)

TDP43 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TDP43 antibody

ab193842 staining TDP43 in wild-type HAP1 cells (top panel) and TDP43 knockout HAP1 cells (bottom panel). The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab193842 at 1µg/ml (shown in green) and ab195889 at 1/250 dilution (shown in pseudo colour red) overnight at +4°C. Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

This antibody is not suitable to detect TDP43 using PFA fixation in ICC.

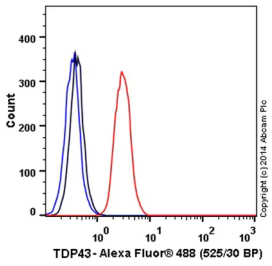


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 488 Anti-TDP43 antibody [EPR5810] (ab193842)

TDP43 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TDP43 antibody

ab193842 staining TDP43 in Hek293 cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab193842 at a 1/250 dilution (shown in green) and ab195889, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at a 1/250 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

This antibody is not suitable to detect TDP43 using PFA fixation in ICC.



Flow Cytometry (Intracellular) - Alexa Fluor® 488 Anti-TDP43 antibody [EPR5810] (ab193842)

TDP43 Flow Cytometry (Intracellular) staining using rabbit Anti-TDP43 antibody

Overlay histogram showing HEK293 cells stained with ab193842 (red line). The cells were fixed with 80% methanol (5 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 (ab193842, 1/500 dilution) for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) Alexa Fluor® 488 used at the same concentration and conditions as the primary antibody. 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. This antibody gave a positive signal in HEK293 cells fixed with 4% formaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

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