abcam

ab247447

Anti-Torsin A/DYT1 antibody [EP2569Y] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EP2569Y
Purification technique	Affinity purification Protein A

Reactivity data

WB

Tested

Species	Human, Mouse, Rat
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	-

Target data

See full target information TOR1A

Function

Protein with chaperone functions important for the control of protein folding, processing, stability and localization as well as for the reduction of misfolded protein aggregates. Involved in the regulation of synaptic vesicle recycling, controls STON2 protein stability in collaboration with the COP9 signalosome complex (CSN). In the nucleus, may link the cytoskeleton with the nuclear envelope, this mechanism seems to be crucial for the control of nuclear polarity, cell movement and, specifically in neurons, nuclear envelope integrity. Participates in the cellular trafficking and may regulate the subcellular location of multipass membrane proteins such as the dopamine transporter SLC6A3, leading to the modulation of dopamine neurotransmission. In the endoplasmic reticulum, plays a role in the quality control of protein folding by increasing clearance of misfolded proteins such as SGCE variants or holding them in an intermediate state for proper refolding. May have a redundant function with TOR1B in non-neural tissues.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab247447 is the carrier-free version of ab76133.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Torsin A also known as DYT1 is an endoplasmic reticulum-based AAA+ ATPase protein. It has a molecular mass of approximately 37 kDa. Torsin A is widely expressed in the central nervous system particularly in neurons. As part of its mechanical function Torsin A plays an important role in ATP binding and hydrolysis which drive conformational changes required for its activities. It is associated with maintaining proper protein folding and quality control within the endoplasmic reticulum and its activity supports membrane trafficking processes.
Biological function summary	Torsin A participates in neuronal functions that ensure cellular homeostasis. It functions within the hetero-oligomeric complexes aiding in the assembly of cellular structures such as the nuclear envelope. Through its interaction with nuclear envelope proteins Torsin A contributes to the maintenance of nuclear integrity. This function helps to regulate the movement of lipids and proteins between the endoplasmic reticulum and other parts of the cell indicating its role in intracellular transport mechanisms.
Pathways	This protein contributes to the dysbindin-containing biogenesis of lysosome-related organelles complex 1 (BLOC-1) pathway important in cellular trafficking

	processes. Torsin A interacts with other AAA+ ATPases and is closely related to LULL1 (luminal domain-like LAP1) which is a partner protein involved in similar pathways. Its function connects to cholesterol biosynthesis pathways indicating its influence on lipid homeostasis in neurons.
Associated diseases and disorders	Mutations in the TOR1A gene that encodes Torsin A cause early-onset torsion dystonia a movement disorder affecting muscle contractions and control. Similar to DYT1 dystonia alterations in Torsin A function have links to Parkinson's disease as both conditions involve disruptions in cellular signaling pathways in neurons. Torsin A has connections to other proteins implicated in these disorders like Parkin which participates in cellular quality control impacting the same neuronal pathways disrupted in these 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

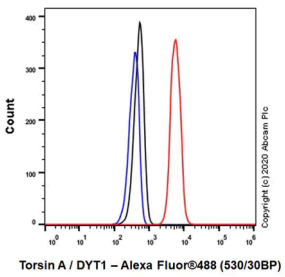
We do not recommend this combination. It is not covered by our product promise.

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.

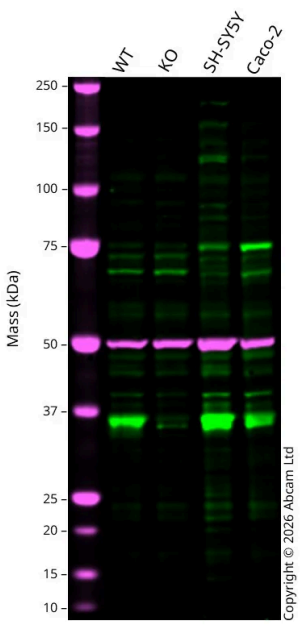
3 product images



Flow Cytometry (Intracellular) - Anti-Torsin A/DYT1 antibody [EP2569Y] - BSA and Azide free (ab247447)

Torsin A/DYT1 Flow Cytometry (Intracellular) staining using rabbit Anti-Torsin A/DYT1 antibody

Intracellular Flow Cytometry analysis of SH-SY5Y (Human neuroblastoma epithelial cell) cells labeling Torsin A/DYT1 with purified ab76133 at 1/100 dilution (10 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS ,BSA, glycerol, and sodium azide (ab76133).



Western blot - Anti-Torsin A/DYT1 antibody [EP2569Y] - BSA and Azide free (ab247447)

Torsin A/DYT1 Western blot staining using rabbit Anti-Torsin A/DYT1 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76133).

Western blot: Anti-Torsin A/DYT1 antibody [EP2569Y] ab76133 staining at 1/2000 dilution, shown in green; Mouse anti alpha Tubulin ab7291 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 35 kDa in Wild-type U-87 MG cell line with no signal observed at this size in TOR1A knockout U-87 MG cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-Torsin A/DYT1 antibody [EP2569Y] (ab76133) at 1/2000 dilution

Lane 1:
Wild-type U-87 MG cell lysate at 20 µg

Lane 2:
TOR1A knockout U-87 MG cell lysate at 20 µg

Lane 3:
SH-SY5Y cell lysate at 20 µg

Lane 4:
Caco-2 cell lysate at 20 µg

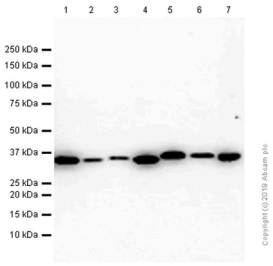
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 38 kDa

Observed band size: 35 kDa



Western blot - Anti-Torsin A/DYT1 antibody [EP2569Y] - BSA and Azide free (ab247447)

Torsin A/DYT1 Western blot staining using rabbit Anti-Torsin A/DYT1 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76133).
All lanes:
Western blot - Anti-Torsin A/DYT1 antibody [EP2569Y] (ab76133) at 1/5000 dilution

Lane 1:
SW480 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
Caco-2 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
Rat brain lysate at 20 µg

Lane 4:
A549 (Human lung carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 5:
NIH/3T3 (Mouse embryonic fibroblast) whole cell lysate at 20 µg

Lane 6:
Mouse lung lysate at 20 µg

Lane 7:
C6 (Rat glial tumor glial cell) 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: 38 kDa

Observed band size: 35 kDa

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