abcam

ab288067

Anti-TPH2 antibody [EPR25100-29]

Recombinant | RabMAb | Advanced Validation | 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	EPR25100-29
Purification technique	Affinity purification Protein A
Specificity	No suitable positive material of human species is available for in-house IHC-P QC, and it worked well on overexpressed cells pellets of human species.
Concentration	0.626 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

mIHC

Tested

Species	Mouse
Dilution info	-

Notes	-

Expected

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

Not recommended

Species	Transfected cell line, Transfected cell lysate
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Transfected cell line
Dilution info	1/500
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate
Dilution info	-
Notes	-

IP

Tested

Species	Transfected cell lysate
Dilution info	1/30
Notes	-

Species	Mouse
Dilution info	1/30
Notes	-

Expected

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

Not recommended

Species	Transfected cell line
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Transfected cell line
Dilution info	1/500
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate
Dilution info	-
Notes	-

WB

Tested

Species	Transfected cell lysate
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Transfected cell line
Dilution info	-
Notes	-

IHC-P

Tested

Species	Transfected cell line
Dilution info	1/2000

Notes	-

Species	Mouse
Dilution info	1/2000
Notes	-

Species	Rat
Dilution info	1/2000
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Expected

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

Not recommended

Species	Transfected cell line, Transfected cell lysate
Dilution info	-
Notes	-

Target data

See full target information TPH2

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 TPH2 protein also known as Tryptophan Hydroxylase 2 acts as a catalyst in the rate-limiting step of serotonin biosynthesis. It resides mostly in the brain specifically within neurons of the central nervous system where it facilitates the conversion of tryptophan to 5-hydroxytryptophan. TPH2 has a molecular mass of approximately 55 kDa. TPH2 expression is mainly observed in the raphe nuclei a region involved in mood regulation and other neural functions.
Biological function summary	TPH2 is essential for serotonin production impacting mood cognition and neurodevelopment. It functions independently rather than as part of a complex. By controlling serotonin levels TPH2 influences many physiological processes including sleep cycles appetite and emotional status. Its activity is important for maintaining normal levels of serotonin in the synaptic cleft therefore contributing to overall neural communication.
Pathways	TPH2 is involved in the serotonin biosynthesis pathway where it regulates serotonin production. This pathway is vital for mood and emotional regulation. TPH2 also interacts with enzymes like AADC (Aromatic L-amino acid decarboxylase) which further converts 5-hydroxytryptophan into serotonin. These interactions ensure a balanced production of serotonin essential for proper neuronal signaling and stable mental states.
Associated diseases and disorders	TPH2 has connections with mental health conditions such as depression and anxiety disorders. Altered TPH2 function can lead to reduced serotonin levels contributing to the pathophysiology of these disorders. Studies show that TPH2 may interact with proteins like MAOA (Monoamine oxidase A) where mutations or dysregulation can exacerbate mood disorders. Understanding TPH2's role offers insights into therapeutic strategies targeting serotonin imbalances in mental health conditions.

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

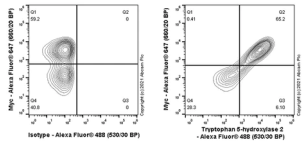
We do not recommend this combination. It is not covered by our product promise.

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.

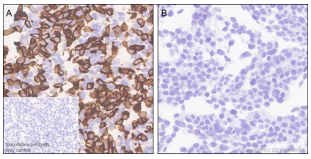
17 product images



Flow Cytometry - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Flow Cytometry staining using rabbit Anti-TPH2 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HEK-293T (Human embryonic kidney epithelial cell) transfected with a human Tryptophan 5-hydroxylase 2 expression vector containing a myc-His tag cells labelling TPH2 with ab288067 at 1/500 dilution (0.1ug)(Right) compared with a Rabbit monoclonal IgG (ab172730) (Left) isotype control. A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.

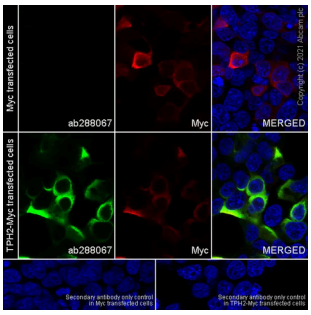


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPH2 antibody

Immunohistochemical analysis of paraffin-embedded (A) HEK-293T cells labelling TPH2 with ab288067 at 1/2000 (0.315 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) . Cytoplasmic staining on (A) HEK-293T cells transfected with a TPH2 expression vector containing a his tag. No staining on (B) HEK-293T cells transfected with empty vector containing a his tag.The section was incubated with ab288067 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 LeicaDS9800 (Bond™ Polymer Refine Detection) .

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

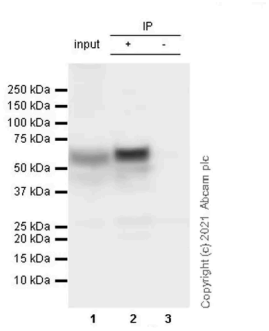


Immunocytochemistry/ Immunofluorescence - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TPH2 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized 293T+OE-1169 cells labelling TPH2 with ab288067 at 1/500 (1.26 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody ready to use(Green). Confocal image showing cytoplasmic staining in 293T cells transfected with myc-tagged TPH2 expression vector. is observed. Myc-Tag Mouse mAb (Alexa Fluor® 647) was used to counterstain tubulin at 1/100 (0.38ug/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) is ready to use.



Immunoprecipitation - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 was immunoprecipitated from 0.35 mg HEK-293T transfected with Tryptophan 5-hydroxylase 2 expression vector containing a myc-His-tag® whole cell lysate 10 ug with ab288067 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab288067 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: HEK-293T transfected with Tryptophan 5-hydroxylase 2 expression vector containing a myc-His-tag® whole cell lysate 10 ug
Lane 2: ab288067 IP in HEK-293T transfected with Tryptophan 5-hydroxylase 2 expression vector containing a myc-His-tag® whole cell lysate

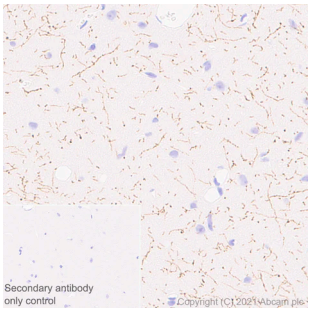
Lane 3:Rabbit monoclonal IgG (ab172730) instead of ab288067 in HEK-293T transfected with Tryptophan 5-hydroxylase 2 expression vector containing a myc-His-tag® whole cell lysate

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

Exposure time: 1 second

All lanes:
Immunoprecipitation - Anti-TPH2 antibody [EPR25100-29] (ab288067)

Predicted band size: 56 kDa

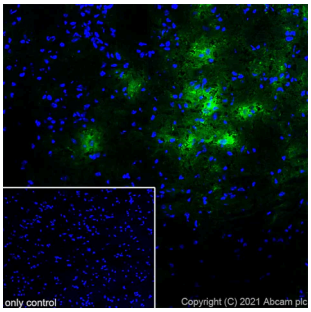


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPH2 antibody

Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labelling TPH2 with ab288067 at 1/2000 (0.315 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) . Positive staining in neural fibers of mouse cerebrum.The section was incubated with ab288067 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 LeicaDS9800 (Bond™ Polymer Refine Detection) .

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

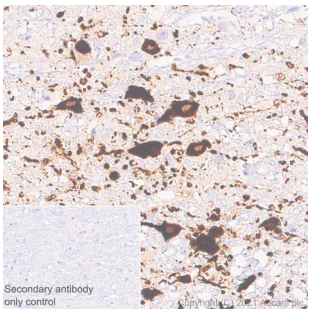


Immunohistochemistry (Frozen sections) - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunohistochemistry (Frozen sections) staining using rabbit Anti-TPH2 antibody

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse midbrain (fresh) tissue labeling TPH2 with ab288067 at 1/500 (1.26 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/mL) dilution (Green). Positive staining on mouse midbrain is observed. The nuclear counterstain was DAPI (Blue).

Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/mL) dilution.

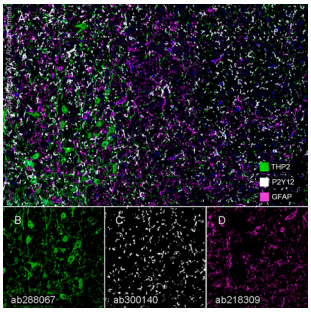


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPH2 antibody

Immunohistochemical analysis of paraffin-embedded Rat midbrain tissue labelling TPH2 with ab288067 at 1/2000 (0.315 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) . Positive staining in rat midbrain.The section was incubated with ab288067 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 LeicaDS9800 (Bond™ Polymer Refine Detection) .

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



Multiplex immunohistochemistry - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Multiplex immunohistochemistry staining of Mouse midbrain tissue using rabbit Anti-TPH2 antibody

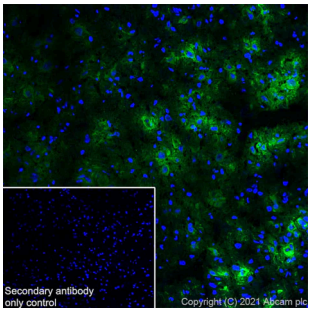
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded Mouse midbrain tissue staining THP2 with ab288067 at a 1/2000 (0.315 ug/ml) dilution, P2Y12 with ab300140 at 1/40000 (0.013 ug/ml) dilution and GFAP with ab218309 at 1/1000 (1.325 ug/ml) dilution.

Panel A: merged staining of anti-THP2 (green; Opal™520), anti-P2Y12 (grey; Opal™570) and anti-GFAP (magenta; Opal™690) on mouse midbrain.
Panel B: anti-THP2 staining the serotonergic neurons in mouse midbrain.
Panel C: anti-P2Y12 staining microglia in mouse midbrain.
Panel D: anti-GFAP staining astrocytes in mouse midbrain.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab2888067, ab300140 and ab218309 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

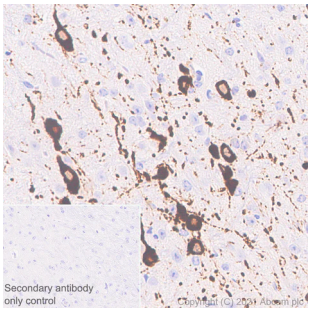
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunohistochemistry (Frozen sections) - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunohistochemistry (Frozen sections) staining using rabbit Anti-TPH2 antibody

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Rat midbrain (fresh) tissue labeling TPH2 with ab288067 at 1/500 (1.26 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/mL) dilution (Green). Positive staining on rat midbrain is observed. The nuclear counterstain was DAPI (Blue). Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/mL) dilution.

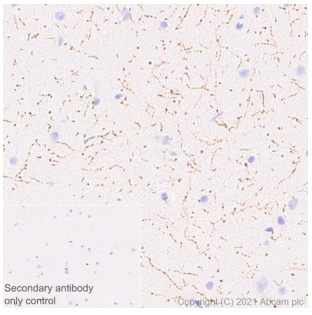


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPH2 antibody

Immunohistochemical analysis of paraffin-embedded Mouse midbrain tissue labelling TPH2 with ab288067 at 1/2000 (0.315 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) . Positive staining in mouse midbrain.The section was incubated with ab288067 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 LeicaDS9800 (Bond™ Polymer Refine Detection) .

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

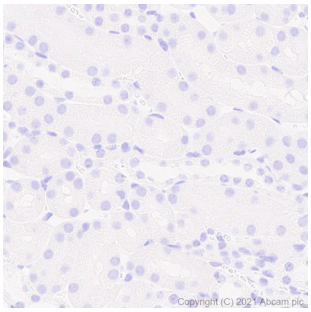


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPH2 antibody

Immunohistochemical analysis of paraffin-embedded Rat cerebrum tissue labelling TPH2 with ab288067 at 1/2000 (0.315 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) . Positive staining in neural fibers of rat cerebrum.The section was incubated with ab288067 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 LeicaDS9800 (Bond™ Polymer Refine Detection) .

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

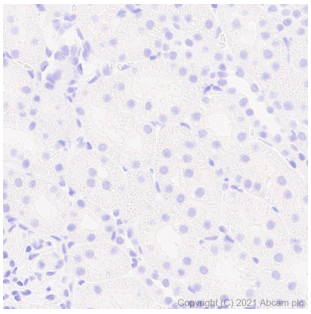


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPH2 antibody

Immunohistochemical analysis of paraffin-embedded Mouse kidney tissue labelling TPH2 with ab288067 at 1/2000 (0.315 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) . No staining in mouse kidney.The section was incubated with ab288067 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 LeicaDS9800 (Bond™ Polymer Refine Detection) .

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

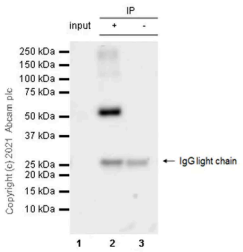


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TPH2 antibody

Immunohistochemical analysis of paraffin-embedded Rat kidney tissue labelling TPH2 with ab288067 at 1/2000 (0.315 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) . No staining in rat kidney.The section was incubated with ab288067 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 LeicaDS9800 (Bond™ Polymer Refine Detection) .

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



Immunoprecipitation - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 was immunoprecipitated from 0.35 mg Mouse midbrain tissue lysate 10 ug with ab288067 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab288067 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: Mouse midbrain tissue lysate 10 ug
Lane 2: ab288067 IP in Mouse midbrain tissue lysate

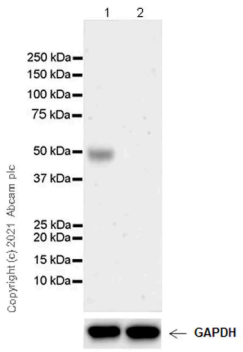
Lane 3:Rabbit monoclonal IgG (ab172730) instead of ab288067 in mouse midbrain tissue lysate

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

Exposure time: 32 seconds

All lanes:
Immunoprecipitation - Anti-TPH2 antibody [EPR25100-29] (ab288067)

Predicted band size: 56 kDa



Western blot - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Western blot staining using rabbit Anti-TPH2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Negative control: kidney (PMID: 12511643).

This blot was developed using a higher sensitivity ECL substrate.

Exposure time: 3 minutes

All lanes:
Western blot - Anti-TPH2 antibody [EPR25100-29] (ab288067) at 1/1000 dilution

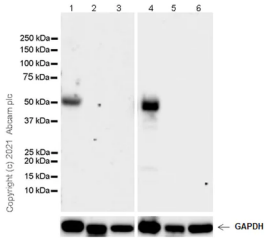
Lane 1:
Human brain tissue lysate at 20 µg

Lane 2:
Human kidney tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 56 kDa



Western blot - Anti-TPH2 antibody [EPR25100-29] (ab288067)

TPH2 Western blot staining using rabbit Anti-TPH2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Negative control: kidney, spleen (PMID: 12511643).

Exposure time: Lanes 1-3: 70 seconds; Lanes 4-6: 26 seconds

All lanes:
Western blot - Anti-TPH2 antibody [EPR25100-29] (ab288067) at 1/1000 dilution

Lane 1:
Mouse midbrain tissue lysate at 20 µg

Lane 2:
Mouse kidney tissue lysate at 20 µg

Lane 3:
Mouse spleen tissue lysate at 20 µg

Lane 4:
Rat midbrain tissue lysate at 20 µg

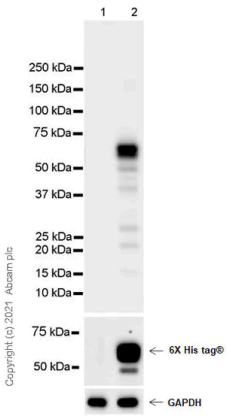
Lane 5:
Rat kidney tissue lysate at 20 µg

Lane 6:
Rat spleen tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/50000 dilution

Predicted band size: 56 kDa



Western blot - Anti-TPH2 antibody [EPR25100-29] (ab288067)

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Exposure time: 10 seconds

All lanes:
Western blot - Anti-TPH2 antibody [EPR25100-29] (ab288067) at 1/1000 dilution

Lane 1:
HEK-293T (human embryonic kidney) transfected with an empty vector (vector control), containi a myc-His-tag®, whole cell lysate at 10 µg

Lane 2:
HEK-293T transfected with Tryptophan 5-hydroxylase 2 expression vector containi a myc-His-tag®, whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 56 kDa

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