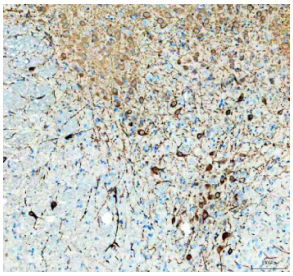
TPH2 Antibody / Tryptophan hydroxylase 2 [clone 31T01] (FY13043)

Catalog No.	Formulation	Size
FY13043	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

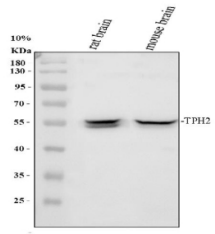
Recombinant RABBIT MONOCLONAL

Bulk quote request

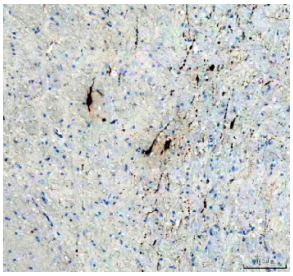
Availability	2-3 weeks
Species Reactivity	Mouse, Rat
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	31T01
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	Q8IWU9
Applications	Western blot: 1:500-1:2000 Immunohistochemistry: 1:50-1:200 Immunofluorescence: 1:50-1:200
Limitations	This TPH2 antibody is available for research use only.



Immunohistochemical staining of TPH2 using anti-TPH2 antibody. TPH2 was detected in a paraffin-embedded section of rat brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1:50 rabbit anti-TPH2 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Western blot analysis of TPH2 using anti-TPH2 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: rat brain tissue lysates, Lane 2: mouse brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-TPH2 antibody at 1:500 overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A specific band was detected for TPH2 at approximately 56 kDa. The expected molecular weight of TPH2 is ~56 kDa.



Immunohistochemical staining of TPH2 using anti-TPH2 antibody. TPH2 was detected in a paraffin-embedded section of mouse brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1:50 rabbit anti-TPH2 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.

Description

TPH2 antibody detects Tryptophan hydroxylase 2, encoded by the TPH2 gene. Tryptophan hydroxylase 2 is the rate limiting enzyme in the biosynthesis of serotonin in the brain. By catalyzing the hydroxylation of tryptophan to 5 hydroxytryptophan, which is then decarboxylated to serotonin, this enzyme plays an essential role in neurotransmission, mood regulation, and circadian rhythms. TPH2 antibody provides researchers with a vital tool to study serotonin metabolism, neuronal signaling, and psychiatric disorders.

Tryptophan hydroxylase 2 is distinct from TPH1, which performs the same enzymatic reaction but is expressed primarily in peripheral tissues. TPH2 is enriched in serotonergic neurons of the raphe nuclei in the brainstem. Research with TPH2 antibody has revealed that disruption of this enzyme reduces central serotonin production, leading to alterations in behavior, mood, and stress responses. This central role has made TPH2 a focus of studies in depression, anxiety, and other mood disorders.

Mutations in TPH2 have been associated with psychiatric disease and developmental disorders. Genetic variants that reduce enzyme activity have been linked to susceptibility to depression, bipolar disorder, and autism spectrum disorders. Studies using TPH2 antibody in postmortem brain tissue have confirmed altered expression in individuals with psychiatric conditions, supporting its clinical relevance. Animal models with disrupted TPH2 expression also display behavioral phenotypes, reinforcing the causal role of this enzyme in serotonin dependent pathways.

Beyond psychiatry, TPH2 is relevant in circadian biology, stress physiology, and drug response. Serotonin produced by TPH2 serves as a precursor for melatonin synthesis in the pineal gland, linking it to circadian regulation. Research with TPH2 antibody has shown that stress hormones modulate its expression, suggesting integration of environmental cues with neurotransmitter metabolism. Because many antidepressants and antipsychotics target serotonin pathways, TPH2 remains an important pharmacological research target.

TPH2 antibody is applied in western blotting, immunohistochemistry, and immunofluorescence. Western blotting measures enzyme levels in brain lysates, immunohistochemistry demonstrates expression in raphe nuclei and other serotonergic structures, and immunofluorescence allows visualization of neuronal localization. These methods make TPH2 antibody indispensable in neuroscience research.

By providing validated TPH2 antibody reagents, NSJ Bioreagents supports research into neurotransmitter metabolism, brain development, and psychiatric disease. Detection of Tryptophan hydroxylase 2 provides researchers with a reliable

means to study serotonin pathways in health and disease.

Application Notes

Optimal dilution of the TPH2 antibody should be determined by the researcher.

Immunogen

Recombinant protein with human THP2 (Position: M1-I490) was used as the immunogen for the TPH2 antibody.

Storage

Store the TPH2 antibody at -20oC.

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