

# Product Datasheet

## Tryptophan hydroxylase 2 Antibody - BSA Free NB100-74555

Unit Size: 100 ul

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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Updated 2/25/2025 v.20.1

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**NB100-74555****Tryptophan hydroxylase 2 Antibody - BSA Free**

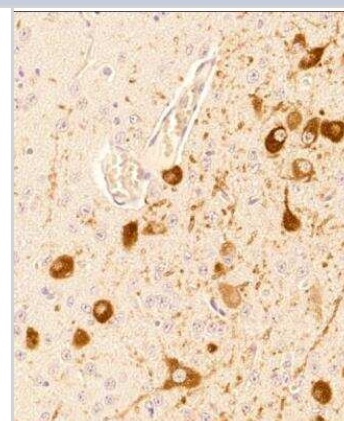
<b>Product Information</b>	
<b>Unit Size</b>	100 ul
<b>Concentration</b>	1.0 mg/ml
<b>Storage</b>	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
<b>Clonality</b>	Polyclonal
<b>Preservative</b>	0.02% Sodium Azide
<b>Isotype</b>	IgG
<b>Purity</b>	Immunogen affinity purified
<b>Buffer</b>	PBS

<b>Product Description</b>	
<b>Host</b>	Rabbit
<b>Gene ID</b>	121278
<b>Gene Symbol</b>	TPH2
<b>Species</b>	Human, Mouse, Rat, Primate, Rabbit
<b>Reactivity Notes</b>	Human reactivity is weak. Mouse reactivity reported in scientific literature (PMID: 16581041). Rat reactivity reported in scientific literature (PMID: 24066056).
<b>Immunogen</b>	Synthetic peptide make to an internal portion of the mouse Tryptophan hydroxylase 2 protein (between amino acids 10-75) [UniProt Q8CGV2]

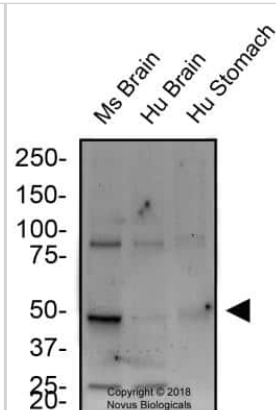
<b>Product Application Details</b>	
<b>Applications</b>	Western Blot, Flow Cytometry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin, Immunoprecipitation, Immunohistochemistry Free-Floating
<b>Recommended Dilutions</b>	Western Blot 1:1000, Flow Cytometry reported in scientific literature (PMID 30581079), Immunohistochemistry 1:10-1:500, Immunocytochemistry/ Immunofluorescence 1:500, Immunoprecipitation 1:1000, Immunohistochemistry-Paraffin 1:100, Immunohistochemistry-Frozen reported in scientific literature (PMID 30350781), Immunohistochemistry Free-Floating reported in scientific literature (PMID 26428905)
<b>Application Notes</b>	IF usage was reported in scientific literature (see Soiza-Reilly M et al, 2011).

**Images**

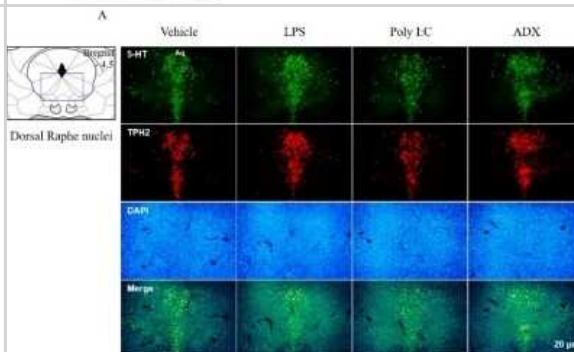
Immunohistochemistry-Paraffin: Tryptophan hydroxylase 2 Antibody [NB100-74555] - IHC analysis of a formalin fixed paraffin embedded tissue section of mouse brain using Tryptophan hydroxylase 2 antibody at 1:25 dilution. The staining was developed using HRP-DAB detection method and the nuclei were counterstained with hematoxylin. The antibody generated staining of the neurons.



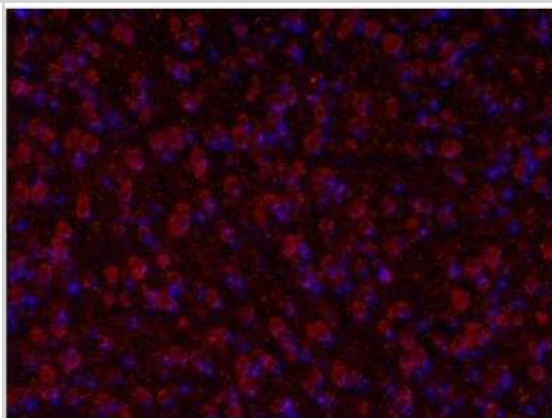
**Western Blot: Tryptophan hydroxylase 2 Antibody [NB100-74555]** - Total protein from mouse brain, stomach and human brain was separated on a 7.5% gel by SDS-PAGE, transferred to PVDF membrane and blocked in 5% non-fat milk in TBST. The membrane was probed with 2.0 ug/ml anti-Tryptophan Hydroxylase 2 in 1% non-fat milk in TBST and detected with an anti-rabbit HRP secondary antibody using chemiluminescence.



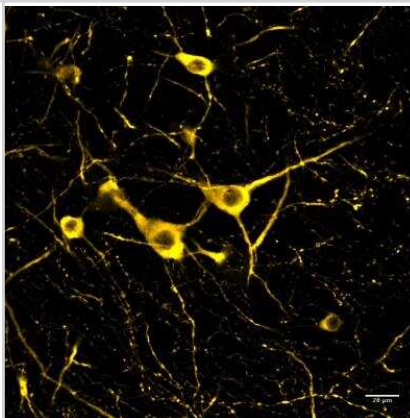
**Immunocytochemistry/Immunofluorescence: Tryptophan hydroxylase 2 Antibody [NB100-74555]** - The 5-HT and Tryptophan hydroxylase 2 in the raphe nuclei of the brain. The 5-HT- and Tryptophan hydroxylase 2-positive double stained cells in the dorsal raphe nuclei. Representative photomicrographs were taken at magnifications of 100x. Quantification of 5-HT and Tryptophan hydroxylase 2. Image collected and cropped by CiteAb from the following publication (<https://www.mdpi.com/2218-273X/10/1/71>), licensed under a CC-BY license.



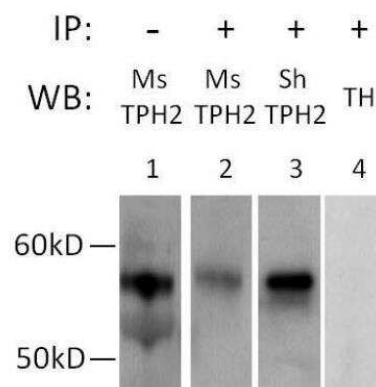
**Immunocytochemistry/Immunofluorescence: Tryptophan hydroxylase 2 Antibody [NB100-74555]** - Analysis in mouse brain cells. Image courtesy of product review by Assaf Vestin.



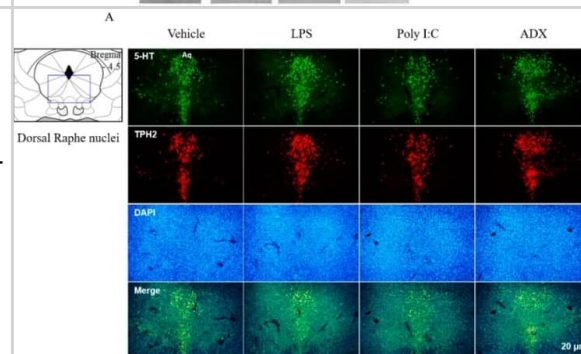
**Immunohistochemistry Free-Floating: Tryptophan hydroxylase 2 Antibody [NB100-74555]** - PFA-perfused mouse midbrain serotonergic neurons. AlexaFluor488 used as secondary antibody. Neurons pseudocolored in yellow hot LUT. Image from verified customer review.



**Immunoprecipitation: Tryptophan hydroxylase 2 Antibody [NB100-74555]**  
 - Analysis of raphe nuclei isolated from Sprague-Dawley rat brains using TPH2 Polyclonal Antibody. PA1-778 was coupled to magnetic beads and added to raphe nuclei whole cell extracts for 15 minutes at RT. Immunoprecipitated proteins were assessed by Western blotting (WB), using either mouse anti-TPH2 (Ms TPH2, Lane 2) or sheep anti-TPH2 antibodies (Sh TPH2, Lane 3). As a positive control for the Western blot, non-immunoprecipitated brain lysates were probed with the mouse anti-TPH2 antibody (Lane 1). As a specificity control, a blot containing immunoprecipitated proteins was probed with an antibody specific for Tyrosine Hydroxylase (TH, Lane 4). Data courtesy of the Innovators Program.



The 5-HT and TPH2 in the raphe nuclei of the brain. The 5-HT- and TPH2-positive double stained cells in the dorsal raphe nuclei (A). Representative photomicrographs were taken at magnifications of 100 $\times$ . Quantification of 5-HT and TPH2 (B). Data are expressed as the means  $\pm$  SD (n = 3). \*, p < 0.05; \*\*, p < 0.01 compared with the vehicle group. 5-HT; 5-hydroxytryptamine, TPH2; tryptophan hydroxylase, DAPI; 4',6'-diamidino-2-phenylindole dihydrochloride.



## Publications

Custodio RJP, Ortiz DM, Lee HJ et al. Serotonin 2C receptors are also important in head-twitch responses in male mice *Psychopharmacology* 2023-10-26 [PMID: 37882810]

Araki R, Kita A, Ago Y, Yabe T. et Al. Chronic social defeat stress induces anxiety-like behaviors via downregulation of serotonin transporter in the prefrontal serotonergic system in mice *Neurochem Int* 2024-02-01 [PMID: 38301899]

Kojima L, Seiriki K, Rokujo H, Nakazawa T et Al. Optimization of AAV vectors for transactivator-regulated enhanced gene expression within targeted neuronal populations *iScience* 2024-05-27 [PMID: 38799556]

Chen M, Wang C, Lin Y et Al. Dorsal raphe nucleus-hippocampus serotonergic circuit underlies the depressive and cognitive impairments in 5×FAD male mice *Transl Neurodegener* 2024-07-24 [PMID: 39044270]

Lee, JS;Kang, JY;Park, SY;Hwang, SJ;Bae, SJ;Son, CG; Central 5-HTergic hyperactivity induces myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS)-like pathophysiology *Journal of translational medicine* 2024-01-08 [PMID: 38191373]

Pan YD, Zhang Y, Zheng WY et al. Intermittent Hypobaric Hypoxia Ameliorates Autistic-Like Phenotypes in Mice. *The Journal of neuroscience : the official journal of the Society for Neuroscience* 2024-02-16 [PMID: 38124211]

Pinto DFC Convergent Dopamine and Serotonin Reward Signals Govern Associative Learning Thesis 2023-01-01

Li W, Shen Z, Yin X et al. Reduction of p11 in dorsal raphe nucleus serotonergic neurons mediates depression-like behaviors *Translational psychiatry* 2023-11-22 [PMID: 37993435] (IHC, Mouse)

Details:

1:500 dilution

Cheng H, Lou Q, Lai N et al. Projection-defined median raphe Pet+ subpopulations are diversely implicated in seizure *Neurobiology of disease* 2023-11-15 [PMID: 37977434] (IHC, Mouse)

Details:

1:1000 dilution, Free floating sections

Bell BJ, Wang AA, Kim DW et al. Characterization of mWake expression in the murine brain *Journal of Comparative Neurology* 2021-06-01 [PMID: 33140455]

Lim J, Bang Y, Kim KM, Choi HJ. Differentiated HT22 cells as a novel model for in vitro screening of serotonin reuptake inhibitors *Frontiers in Pharmacology* 2023-01-10 [PMID: 36703746] (Block/Neutralize)

Beier K. Modified viral-genetic mapping reveals local and global connectivity relationships of ventral tegmental area dopamine cells *eLife* 2022-05-23 [PMID: 35604019]

More publications at <http://www.novusbio.com/NB100-74555>



## Procedures

### Western Blot Protocol for Tryptophan hydroxylase 2 Antibody (NB100-74555)

#### Western Blot Protocol

1. Perform SDS-PAGE on samples to be analyzed, loading 10-25 ug of total protein per lane.
2. Transfer proteins to PVDF membrane according to the instructions provided by the manufacturer of the membrane and transfer apparatus.
3. Stain the membrane with Ponceau S (or similar product) to assess transfer success, and mark molecular weight standards where appropriate.
4. Rinse the blot TBS -0.05% Tween 20 (TBST).
5. Block the membrane in 5% Non-fat milk in TBST (blocking buffer) for at least 1 hour.
6. Wash the membrane in TBST three times for 10 minutes each.
7. Dilute primary antibody in 5% BSA and incubate overnight at 4C with gentle rocking.
8. Wash the membrane in TBST three times for 10 minutes each.
9. Incubate the membrane in diluted HRP conjugated secondary antibody in blocking buffer (as per manufacturer's instructions) for 1 hour at room temperature.
10. Wash the blot in TBST three times for 10 minutes each (this step can be repeated as required to reduce background).
11. Apply the detection reagent of choice in accordance with the manufacturers instructions.

### Immunohistochemistry-Paraffin Protocol for Tryptophan hydroxylase 2 Antibody (NB100-74555)

#### Immunohistochemistry-Paraffin Embedded Sections

##### Antigen Unmasking:

Bring slides to a boil in 10 mM sodium citrate buffer (pH 6.0) then maintain at a sub-boiling temperature for 10 minutes. Cool slides on bench-top for 30 minutes (keep slides in the sodium citrate buffer all the time).

##### Staining:

1. Wash sections in deionized water three times for 5 minutes each.
2. Wash sections in PBS for 5 minutes.
3. Block each section with 100-400 ul blocking solution (1% BSA in PBS) for 1 hour at room temperature.
4. Remove blocking solution and add 100-400 ul diluted primary antibody. Incubate overnight at 4 C.
5. Remove antibody solution and wash sections in wash buffer three times for 5 minutes each.
6. Add 100-400 ul HRP polymer conjugated secondary antibody. Incubate 30 minutes at room temperature.
7. Wash sections three times in wash buffer for 5 minutes each.
8. Add 100-400 ul DAB substrate to each section and monitor staining closely.
9. As soon as the sections develop, immerse slides in deionized water.
10. Counterstain sections in hematoxylin.
11. Wash sections in deionized water two times for 5 minutes each.
12. Dehydrate sections.
13. Mount coverslips.







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### **Products Related to NB100-74555**

HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control
NB100-74555PEP	Tryptophan hydroxylase 2 Antibody Blocking Peptide

### **Limitations**

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

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