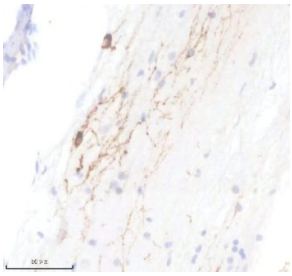
Zebrafish TPH2 Antibody / Tryptophan Hydroxylase 2 Antibody (RZ1331)

Catalog No.	Formulation	Size
RZ1331	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Lyophilized from a buffered saline solution containing 2% trehalose. Reconstitute with 0.2 mL distilled water to yield a final antibody concentration of 500 ug/ml.
UniProt	A0A8M1P7E6
Applications	Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This Zebrafish TPH2 Antibody / Tryptophan Hydroxylase 2 Antibody is available for research use only.



Zebrafish TPH2 Antibody Serotonergic Spinal Cord IHC. Immunohistochemistry staining of FFPE zebrafish spinal cord tissue using Zebrafish TPH2 Antibody demonstrates distinct cytoplasmic and neurite-associated HRP-DAB brown staining within scattered neural cell populations and elongated neuronal processes. The staining pattern is consistent with expression of Tryptophan Hydroxylase 2 (TPH2), the rate-limiting enzyme in serotonin biosynthesis and a well-established marker of serotonergic neurons. Signal is observed within neural structures associated with serotonergic neurotransmission, reflecting the role of TPH2 in regulating serotonin production and nervous system function. Heat mediated antigen retrieval was performed in EDTA buffer. Primary antibody was incubated overnight at 4Â°C followed by detection using a peroxidase-conjugated goat anti-rabbit secondary antibody and DAB chromogen.

Description

Zebrafish TPH2 Antibody / Tryptophan Hydroxylase 2 Antibody recognizes Tryptophan Hydroxylase 2 (TPH2), the rate-limiting enzyme responsible for serotonin biosynthesis within the central nervous system. TPH2 catalyzes the hydroxylation of L-tryptophan to 5-hydroxy-L-tryptophan, the first and regulatory step in the production of serotonin (5-hydroxytryptamine, 5-HT). As the neuronal isoform of tryptophan hydroxylase, TPH2 is primarily expressed in serotonergic neurons and plays a fundamental role in controlling serotonin availability throughout the brain. The

conserved nature of serotonergic signaling pathways has established zebrafish as an important model for investigating TPH2 function in neurodevelopment, behavior, and neurobiology.

Serotonin serves as a critical neurotransmitter regulating numerous physiological and behavioral processes including mood, sleep, feeding behavior, learning, stress responses, locomotion, and social interaction. Because TPH2 controls the rate-limiting step in serotonin synthesis, expression of this enzyme is frequently used as a marker of serotonergic neuronal populations and serotonergic pathway activity. In zebrafish, TPH2 expression contributes to the establishment and maintenance of neural circuits involved in sensory processing, neuroendocrine regulation, and behavioral adaptation. Consequently, TPH2 is widely studied in developmental neuroscience and neurotransmitter signaling research.

During embryonic and larval development, serotonin signaling influences neuronal differentiation, axon guidance, synapse formation, and neural circuit maturation. Proper regulation of TPH2 expression is therefore essential for normal nervous system development and function. Researchers commonly monitor TPH2 expression when investigating developmental processes, genetic modifications, and environmental factors that affect serotonergic signaling. The optical transparency and genetic tractability of zebrafish make this model particularly valuable for visualizing and analyzing serotonergic neuron development in vivo.

Alterations in TPH2 activity or serotonin biosynthesis have been associated with behavioral abnormalities, stress-related responses, neuropsychiatric disorders, and changes in neuronal function across vertebrate species. As a result, TPH2 has become an important target in neuropharmacology, behavioral neuroscience, and toxicology studies. Zebrafish models are frequently used to investigate the effects of pharmaceuticals, environmental contaminants, and genetic perturbations on serotonin-dependent pathways, with TPH2 serving as a key indicator of serotonergic system integrity and activity.

At NSJ Bioreagents, we provide highly validated antibodies for neuroscience, developmental biology, and zebrafish research. Zebrafish TPH2 Antibody / Tryptophan Hydroxylase 2 Antibody targets a critical enzyme involved in serotonin biosynthesis and serotonergic neuron function. TPH2 expression is widely studied in the context of neurotransmitter regulation, nervous system development, behavioral neuroscience, neuropharmacology, and serotonergic signaling pathways. Continued investigation of TPH2 is expanding our understanding of the molecular mechanisms that govern serotonin production, neuronal communication, and vertebrate nervous system function.

This Zebrafish antibody is part of a broader Zebrafish / Danio rerio antibody panel offered by NSJ Bioreagents.

Application Notes

The optimal working dilution of the Zebrafish TPH2 Antibody / Tryptophan Hydroxylase 2 Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish TPH2 recombinant protein (amino acids M1-V184) was used as the immunogen for the Zebrafish TPH2 Antibody.

Storage

After reconstitution, the Zebrafish TPH2 Antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Zebrafish Tryptophan Hydroxylase 2 Antibody, Zebrafish Serotonin Synthesis Enzyme Antibody, Zebrafish Neuronal Tryptophan Hydroxylase Antibody, Zebrafish 5-HT Biosynthesis Enzyme Antibody, Zebrafish TPH-2 Antibody, Zebrafish Serotonergic Neuron Marker Antibody

Copyright © NSJ Bioreagents. All rights reserved.