

## Tyrosine Hydroxylase Antibody

Tested Species Reactivity	Published Species Reactivity
Many (Many)	Human (Hu) Mouse (Ms) Rat (Rt)

Tested Applications	Dilution *
Western Blot (WB)	1:1,000
Immunofluorescence (IF)	1:1,000
Immunohistochemistry (Frozen) (IHC (F))	1:1,000

Published Applications	Dilution
Immunohistochemistry (IHC)	See publications

\* Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own experiment using appropriate negative and positive controls.

Details	
<b>Catalog Number:</b>	OPA1-04050
<b>Size:</b>	100 µl
<b>Class:</b>	Polyclonal
<b>Type:</b>	Antibody
<b>Clone:</b>	
<b>Host / Isotype:</b>	Rabbit /
<b>Immunogen:</b>	SDS-denatured, native rat tyrosine hydroxylase purified from pheochromocytoma

Form Information	
<b>Form:</b>	Liquid
<b>Purification:</b>	Affinity chromatography
<b>Storage Buffer:</b>	0.01M HEPES, pH 7.5, with 0.15M NaCl, 0.1mg/ml BSA, 50% glycerol
<b>Preservative:</b>	no preservative
<b>Storage Conditions:</b>	-20° C, Avoid Freeze/Thaw Cycles

## Product Specific Information

In Western blot, this antibody detects a single ~60 kDa protein representing tyrosine hydroxylase from rat brain lysates of PC-12 cells stimulated by okadaic acid. Immunohistochemical staining of TH in human brain with OPA1-04050 results in intense labeling of the dopaminergic neurons in the substantia nigra.

Store at -20°C short term, 80°C long term.

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## General Information

Tyrosine hydroxylase (TH) is the rate-limiting enzyme in the synthesis of the catecholamine neurotransmitters (dopamine, epinephrine, and norepinephrine). It is responsible for the conversion of L-tyrosine to L-dopa in the catecholamine synthesis pathway. In all species, catecholamine synthesis is regulated by the interaction of TH with a cofactor, tetrahydrobiopterin (BH4). BH4 binds to the TH catalytic domain, resulting in enzymatic activity. Unlike TH in non-primate species, four human TH mRNA splice variants (hTH1-hTH4) have been isolated. These variants are identical in their catalytic domain, but differ in their N-terminal, regulatory domains. Little information has been uncovered regarding the regulatory role of these isoforms in vivo.

The role of TH in the synthesis of catecholamine neurotransmitters suggests a correlation between the enzyme and a number of neuropathogenic diseases characterized by irregular catecholamine levels. Catecholamine level irregularities have been uncovered in Parkinson's disease, schizophrenia, and dystonia, as well as a variety of cardiovascular diseases.

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