

PRODUCT INFORMATION



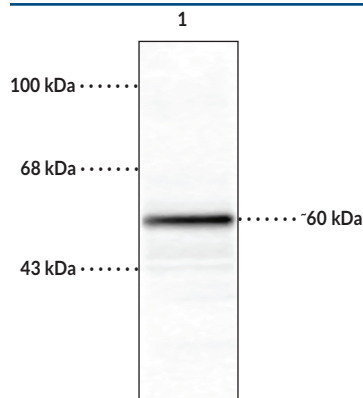
Tyrosine Hydroxylase (rat, native) Polyclonal Antibody

Item No. 29299

Overview and Properties

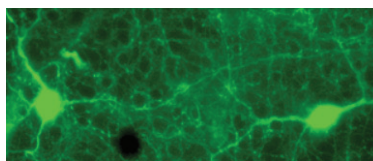
Contents: This vial contains 100 μ l affinity-purified polyclonal antibody from pooled serum.
Synonyms: TH, Tyrosine 3-hydroxylase, Tyrosine 3-monoxygenase
Immunogen: Native rat tyrosine hydroxylase purified from pheochromocytoma
Molecular Weight: ~60 kDa
Species Reactivity: (+) Human, mouse, rabbit, rat
Form: Liquid
Storage: -20°C (as supplied)
Stability: \geq 1 year
Storage Buffer: 10 mM HEPES, pH 7.5, with 150 mM sodium chloride, 100 μ g/ml BSA, and 50% glycerol
Host: Sheep
Applications: Immunocytochemistry (ICC), immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution is 1:1,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: Rat striatal lysate (10 μ g)

WB of 10 μ g of rat striatal lysate showing specific immunolabeling of the ~60 kDa tyrosine hydroxylase protein.



Immunolabeling of rabbit retina showing specific labeling of tyrosine hydroxylase in green.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

Tyrosine hydroxylase (TH) catalyzes the conversion of tyrosine to L-DOPA, which is the rate-limiting step in the biosynthesis of the catecholamines dopamine, norepinephrine, and epinephrine.¹ It assembles into tetramers, with each monomer comprised of an N-terminal regulatory domain with three serine residues at positions 19, 31, and 40 that are subject to regulatory phosphorylation, a central catalytic domain, and a C-terminal tetramerization domain. TH is expressed in dopaminergic neurons in the olfactory bulb, diencephalon, substantia nigra, ventral tegmental area, and retinal amacrine cells, adrenergic and noradrenergic cells in the hypothalamus, medulla, and locus coeruleus (LC), as well as sympathetic ganglia and adrenal chromaffin cells. Due to its expression in catecholaminergic neurons, TH has been used as a marker of these cells in the brain.² Mutations in *TH* have been found in patients with tyrosine hydroxylase deficiency, infantile parkinsonism, and progressive infantile encephalopathy.^{3,4} Cayman's Tyrosine Hydroxylase (rat, native) Polyclonal Antibody can be used for immunocytochemistry (ICC), immunohistochemistry (IHC), and Western blot (WB) applications. The antibody recognizes TH at approximately 60 kDa from human, mouse, rabbit, and rat samples.

References

1. Tekin, I., Roskoski, R., Jr., Carkaci-Salli, N., *et al.* Complex molecular regulation of tyrosine hydroxylase. *J. Neural Transm. (Vienna)* **121(12)**, 1451-1481 (2014).
2. Berod, A., Hartman, B.K., Keller, A., *et al.* A new double labeling technique using tyrosine hydroxylase and dopamine- β -hydroxylase immunohistochemistry: Evidence for dopaminergic cells lying in the pons of the beef brain. *Brain Res.* **240(2)**, 235-243 (1982).
3. Willemsen, M.A., Verbeek, M.M., Kamsteeg, E.-J., *et al.* Tyrosine hydroxylase deficiency: A treatable disorder of brain catecholamine biosynthesis. *Brain* **133(Pt. 6)**, 1810-1822 (2010).
4. White, R.B. and Thomas, M.G. Moving beyond tyrosine hydroxylase to define dopaminergic neurons for use in cell replacement therapies for Parkinson's disease. *CNS Neurol. Disord. Drug Targets* **11(4)**, 340-349 (2012).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM