3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Anti-Tyrosine Hydroxylase
Developed in Rabbit, Affinity Isolated Antibody

Product Number **T 8700**

Product Description

Anti-Tyrosine Hydroxylase (TH) is developed in rabbit using SDS-denatured rat tyrosine hydroxylase purified from pheochromocytoma as immunogen. The antibody was prepared from pooled sera by protein A chromatography and affinity purification of a portion of the IgG fraction on a tyrosine hydroxylase- Aminolink® Plus column.

Anti-Tyrosine Hydroxylase specifically recognizes the ~ 60 kDa rat tyrosine hydroxylase. The antibody cross-reacts with all mammalian and at least some non-mammalian forms of the enzyme. It has been used in immunoblotting, immunofluorescence and immunohistochemistry applications.

Tyrosine hydroxylase (TH) is involved in the conversion of phenylalanine to dopamine. It catalyzes the initial, rate-limiting step of the catecholamine biosynthetic pathway.[1] Catecholamines include dopamine, noradrenaline, and adrenaline. These three catecholamines are important neurotransmitters and hormones that regulate visceral functions, motor coordination, and arousal in adults. In rodent embryos, inactivation of both tyrosine hydroxylase alleles results in mid-gestational lethality: about 90% of mutant embryos die, apparently of cardiovascular failure. Administration of L-DOPA (dihydroxyphenylalanine), the product of the tyrosine hydroxylase reaction, to pregnant females results in complete rescue of mutant mice in utero. Without further treatment, however, they die before weaning.[2] Catecholamines appear essential for mouse fetal development and postnatal survival. Human TH1 is phosphorylated by mitogen and stress-activated protein kinase 1 (MSK1) at serine 40 and by p38 regulated/activated kinase (PRAK) on serine 19. Phosphorylation of both serines induced a high-affinity binding of 14-3-3 proteins.[3]

Reagent

The antibody is supplied as 100 µL in 10 mM HEPES, pH 7.5, 150 mM NaCl, 100 µg/ml BSA and 50% glycerol.

Storage/Stability

Store at –20 °C. Do not store in frost-free freezers. Working dilution samples should be discarded if not used within 12 hours. The antibody is stable for at least 12 months when stored appropriately.

Product Profile

The supplied reagent is sufficient for 10 immunoblots.

A recommended working dilution of 1:1000 is determined by immunoblotting using rat brain lysates of PC-12 cells stimulated by okadaic acid.
For immunofluorescence and and immunohistochemistry, also use a 1:000 dilution.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Kumer, S.C. and Vrana, K.E., Intricate regulation of tyrosine hydroxylase activity and gene expression., J Neurochem. **67**, 443-462 (1996).
2. Zhou, Q. I., et al., Targeted disruption of the tyrosine hydroxylase gene reveals that catecholamines are required for mouse fetal development., Nature. **374**, 640-643 (1995).
3. Toska, K., et al., Regulation of tyrosine hydroxylase by stress-activated protein kinases. J. Neurochem., **83**, 775-783 (2002).

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