SANTA CRUZ BIOTECHNOLOGY, INC.

TH (45): sc-136100

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

The enzyme tyrosine hydroxylase (TH), also designated tyrosine 3-monooxygenase (TY3H), catalyzes the conversion of tyrosine to L-dopa, which is the rate limiting step in the biosynthesis of catecholamines such as Dopamine, adrenalin and noradrenalin. TH is thought to play a role in the pathogenesis of Parkinson's disease, which is associated with reduced Dopamine levels. Two transcription factor binding sites in the proximal region of the TH gene, the TPA-responsive element (TRE) and the cAMP responsive element (CRE), have been implicated in the complex regulation of the TH gene. TH is also known to be upregulated by the glia maturation factor (GMF), a Cdc10/Swi6 motif-containing protein called V-1, and a variety of additional compounds.

REFERENCES

1. Stull, N.D., et al. 1996. Acidic fibroblast growth factor and catecholamines synergistically upregulate tyrosine hydroxylase activity in developing and damaged dopamine neurons in culture. J. Neurochem. 67: 1519-1524.
2. Nagatsu, T., et al. 1998. Catecholamine synthesis and release. Overview. Adv. Pharmacol. 42: 1-14.
3. Haavik, J., et al. 1998. Tyrosine hydroxylase and Parkinson's disease. Mol. Neurobiol. 16: 285-309.
4. Trocme, C., et al. 1998. CRE and TRE sequences of the rat tyrosine hydroxylase promoter are required for TH basal expression in adult mice but not in the embryo. Eur. J. Neurosci. 10: 508-521.
5. Zaheer, A., et al. 1998. Overexpression of glia maturation factor (GMF) in PC-12 pheochromocytoma cells activates p38 MAP kinase, MAPKAP kinase-2 and tyrosine hydroxylase. Biochem. Biophys. Res. Commun. 250: 278-282.
6. Yamakuni, T., et al. 1998. A novel protein containing Cdc10/Swi6 motifs regulates expression of mRNA encoding catecholamine biosynthesizing enzymes. J. Biol. Chem. 273: 27051-27054.
7. Boundy, V.A., et al. 1998. Regulation of tyrosine hydroxylase promoter activity by chronic Morphine in TH9.0-LacZ transgenic mice. J. Neurosci. 18: 9989-9995.

CHROMOSOMAL LOCATION

Genetic locus: TH (human) mapping to 11p15.5; Th (mouse) mapping to 7 F5.

SOURCE

TH (45) is a mouse monoclonal antibody raised against amino acids 18-133 of TH of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

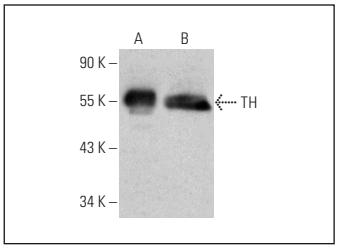
TH (45) is recommended for detection of TH of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for TH siRNA (h): sc-36662, TH siRNA (m): sc-36661, TH siRNA (r): sc-270461, TH shRNA Plasmid (h): sc-36662-SH, TH shRNA Plasmid (m): sc-36661-SH, TH shRNA Plasmid (r): sc-270461-SH, TH shRNA (h) Lentiviral Particles: sc-36662-V, TH shRNA (m) Lentiviral Particles: sc-36661-V and TH shRNA (r) Lentiviral Particles: sc-270461-V.

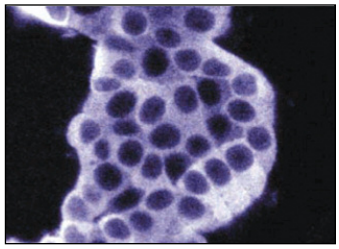
Molecular Weight of TH: 60 kDa.

Positive Controls: human adrenal gland extract: sc-363761, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

DATA



TH (45): sc-136100. Western blot analysis of TH expression in human adrenal gland (**A**) and rat brain (**B**) tissue extracts.



TH (45): sc-136100. Immunofluorescence staining of PC-12 cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Sousa, J.B., et al. 2014. Lack of endogenous adenosine tonus on sympathetic neurotransmission in spontaneously hypertensive rat mesenteric artery. PLoS ONE 9: e105540.

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CONJUGATES

See **TH (F-11): sc-25269** for TH antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.