SANTA CRUZ BIOTECHNOLOGY, INC.

TH (A-6): sc-374048

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.

REFERENCE

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.

CHROMOSOMAL LOCATION

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

SOURCE

TH (A-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 500-526 at the C-terminus of TH of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374048 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

TH (A-6) is recommended for detection of TH of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

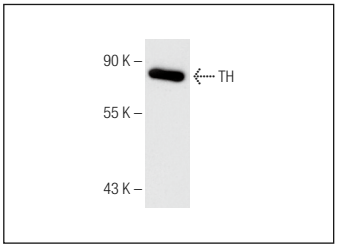
Molecular Weight of TH: 60 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, PC-12 + NGF cell lysate: sc-3808 or mouse brain extract: sc-2253.

STORAGE

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

DATA



TH (A-6): sc-374048. Western blot analysis of TH expression in PC-12 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Wu, C.R., et al. 2015. Carnosic acid protects against 6-hydroxydopamine-induced neurotoxicity in *in vivo* and *in vitro* model of Parkinson's disease: involvement of antioxidative enzymes induction. Chem. Biol. Interact. 225: 40-46.
2. Hennenberg, M., et al. 2016. Inhibition of adrenergic and non-adrenergic smooth muscle contraction in the human prostate by the phosphodiesterase 10-selective inhibitor TC-E 5005. Prostate 76: 1364-1374.
3. Wang, Y., et al. 2016. P21-activated kinase inhibitors FRAX486 and IPA3: inhibition of prostate stromal cell growth and effects on smooth muscle contraction in the human prostate. PLoS ONE 11: e0153312.
4. Wang, Y., et al. 2016. Smooth muscle contraction and growth of stromal cells in the human prostate are both inhibited by the Src family kinase inhibitors, AZM475271 and PP2. Br. J. Pharmacol. 173: 3342-3358.
5. Ferizovic, H., et al. 2020. The fatty acid amide hydrolase inhibitor URB597 modulates splenic catecholamines in chronically stressed female and male rats. Int. Immunopharmacol. 85: 106615.
6. Jankovic, M., et al. 2020. Inhibition of the fatty acid amide hydrolase changes behaviors and brain catecholamines in a sex-specific manner in rats exposed to chronic unpredictable stress. Physiol. Behav. 227: 113174.
7. Ferizovic, H., et al. 2022. Effects of fatty acid amide hydroxylase inhibitor URB597 on the catecholaminergic activity of the adrenal medulla in stressed male and female rats. Pharmacology 107: 81-89.

RESEARCH USE

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

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.