SANTA CRUZ BIOTECHNOLOGY, INC.

TPH (H-60): sc-30079

BACKGROUND

Phenylalanine hydroxylase (PAH), tyrosine hydroxylase (TH) and tryptophan hydroxylase (TPH) comprise a small family of monooxygenases that use tetrahydropterine as a cofactor during the catabolism of aromatic L-amino acids. PAH, TH and TPH all contain catalytic domains with an amino-terminal regulatory domain and a short carboxy-terminal tetramerization domain. Each of these enzymes also contains a single ferrous iron atom, which is bound to two histidines and a glutamate and is likely to be involved in the formation of the hydroxylating intermediate. TPH is the first and rate-limiting step in the biosynthesis of serotonin in the central nervous system and melatonin in the pineal gland. Alteration of TPH function may be a key factor in the pathology of several neuropsychiatric disorders associated with serotonin, including depression, aggression, alcoholism and schizophrenia. For instance, L-DOPA, which is used as a common therapy for Parkinson's disease (PD) patients, inhibits TPH function, which subsequently, is thought to contribute to the onset of depression in PD patients.

REFERENCES

1. Abbar, M., et al. 1996. Epidemiologic and molecular genetic of suicidal behavior. Encephale 22: 19-24.
2. Mockus, S.M., et al. 1998. Advances in the molecular characterization of tryptophan hydroxylase. J. Mol. Neurosci. 10: 163-179.

CHROMOSOMAL LOCATION

Genetic locus: TPH1 (human) mapping to 11p15.1; Tph1 (mouse) mapping to 7 B4.

SOURCE

TPH (H-60) is a rabbit polyclonal antibody raised against amino acids 385-437 mapping at the C-terminus of TPH of human origin.

PRODUCT

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

APPLICATIONS

TPH (H-60) is recommended for detection of TPH 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)], 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).

TPH (H-60) is also recommended for detection of TPH in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TPH siRNA (h): sc-41526, TPH siRNA (m): sc-41527, TPH shRNA Plasmid (h): sc-41526-SH, TPH shRNA Plasmid (m): sc-41527-SH, TPH shRNA (h) Lentiviral Particles: sc-41526-V and TPH shRNA (m) Lentiviral Particles: sc-41527-V.

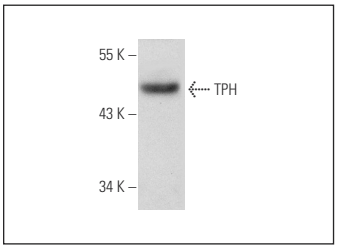
Molecular Weight of TPH: 53 kDa.

Positive Controls: rat brain extract: sc-2392.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



TPH (H-60): sc-30079. Western blot analysis of TPH expression in rat brain tissue extract.

SELECT PRODUCT CITATIONS

1. Omenetti, A., et al. 2010. Paracrine molduation of cholangiocyte serotonin sythesis orchestrates biliary remodeling in adults. Am. J. Physiol. Gastrointest. Liver Physiol. 300: G303-G315.
2. Talaei, F., et al. 2012. Induction of VMAT-1 and TPH-1 expression induces vesicular accumulation of serotonin and protects cells and tissue from cooling/rewarming injury. PLoS ONE 7: e30400.
3. Nascimento, E., et al. 2013. Long-lasting effect of perinatal exposure to L-tryptophan on circadian clock of primary cell lines established from male offspring born from mothers fed on dietary protein restriction. PLoS ONE 8: e56231.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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