

# TPH (C-20): sc-15116

## 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 both 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

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4. Kuhn, D.M. 1999. Tryptophan hydroxylase regulation. Drug-induced modifications that alter serotonin neuronal function. *Adv. Exp. Med. Biol.* 467: 19-27.
5. Kowlessur, D. and Kaufman, S. 1999. Cloning and expression of recombinant human pineal tryptophan hydroxylase in *Escherichia coli*: purification and characterization of the cloned enzyme. *Biochim. Biophys. Acta* 1434: 317-330.
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## CHROMOSOMAL LOCATION

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

## SOURCE

TPH (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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.

Blocking peptide available for competition studies, sc-15114 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

TPH (C-20) 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), 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).

PH (C-20) is also recommended for detection of TPH in additional species, including equine and canine.

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.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.