

# p-TPH (Ser 58): sc-135716

## 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. Mouse, rat, human and rabbit TPH undergo PKA-mediated phosphorylation on Ser 58, a residue that is located in the N-terminal regulatory domain.

## REFERENCES

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4. Fitzpatrick, P.F. 1999. Tetrahydropterin-dependent amino acid hydroxylases. *Annu. Rev. Biochem.* 68: 355-381.
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## CHROMOSOMAL LOCATION

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

## SOURCE

p-TPH (Ser 58) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 58 of TPH of rabbit origin.

## PRODUCT

Each vial contains IgG in 100 µl of 10 mM HEPES with 150 mM NaCl, 50% glycerol and < 0.1% BSA.

## APPLICATIONS

p-TPH (Ser 58) is recommended for detection of Ser 58 phosphorylated TPH of rat, human and rabbit origin and correspondingly Ser 61 phosphorylated TPH of mouse origin of mouse, rat, human, rabbit, *Xenopus laevis* and zebrafish origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000) and immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)].

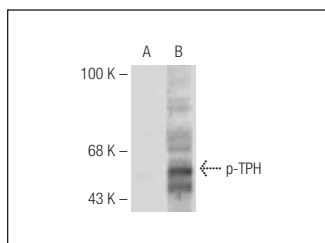
Suitable for use as control antibody for TPH siRNA (h): sc-41526, TPH siRNA (m): sc-41527, TPH shRNA Plasmid (h): sc-41526-SH, TPH shRNA Plasmid (m): sc-41527-SH, TPH shRNA (h) Lentiviral Particles: sc-41526-V and TPH shRNA (m) Lentiviral Particles: sc-41527-V.

Molecular Weight of p-TPH: 53 kDa.

## 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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



p-TPH (Ser 58): sc-135716. Western blot analysis of untreated (A) and cAMP-dependent protein kinase (PKA)-treated (B) rabbit recombinant TPH.

## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## RESEARCH USE

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