SANTA CRUZ BIOTECHNOLOGY, INC.

p-TPH2 (Ser 19): sc-135717

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Phenylalanine hydroxylase (PAH), tyrosine hydroxylase (TH), tryptophan hydroxylase (TPH) and tryptophan hydroxylase 2 (TPH2) comprise a small family of monooxygenases that catalyze the rate-limiting step in the catabolism of aromatic L-amino acids and utilize tetrahydropterine as a cofactor. TPH2 is highly expressed in the central nervous system (CNS), mainly in the brain. TPH2 catalyzes the first step in the biosynthesis of serotonin in the CNS and melatonin in the pineal gland, and may be involved in the pathology of several neuropsychiatric disorders. Glucocorticoid-mediated reduction of TPH2 is associated with the etiology of mood disorders, specifically psychotic major depression, and TPH2 may be related to dysregulation of serotonin neurotransmission in the brain which commonly leads to suicidal behavior. Mouse and rat TPH2 are phosphorylated on Ser 19.

REFERENCES

1. Brown, S.M., et al. 2005. A regulatory variant of the human tryptophan hydroxylase-2 gene biases amygdala reactivity. Mol. Psychiatry 10: 884-888.
2. Sheehan, K., et al. 2005. Tryptophan hydroxylase 2 (TPH2) gene variants associated with ADHD. Mol. Psychiatry 10: 944-949.
3. Garriock, H.A., et al. 2005. Lack of association of TPH2 exon XI polymorphisms with major depression and treatment resistance. Mol. Psychiatry 10: 976-977.
4. Clark, J.A., et al. 2005. Differential hormonal regulation of tryptophan hydroxylase-2 mRNA in the murine dorsal raphe nucleus. Biol. Psychiatry 57: 943-946.
5. De Luca, V., et al. 2005. Promoter polymorphism of second tryptophan hydroxylase isoform (TPH2) in schizophrenia and suicidality. Psychiatry Res. 134: 195-198.
6. De Luca, V., et al. 2005. Tryptophan hydroxylase 2 gene expression and promoter polymorphisms in bipolar disorder and schizophrenia. Psychopharmacology 183: 378-382.
7. De Luca, V., et al. 2006. The interaction between TPH2 promoter haplotypes and clinical-demographic risk factors in suicide victims with major psychoses. Genes Brain Behav. 5: 107-110.
8. De Luca, V., et al. 2006. Gene expression of tryptophan hydroxylase 2 in post-mortem brain of suicide subjects. Int. J. Neuropsychopharmacol. 9: 21-25.

CHROMOSOMAL LOCATION

Genetic locus: Tph2 (mouse) mapping to 10 D2.

SOURCE

p-TPH2 (Ser 19) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 19 phosphorylated TPH2 of rat 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-TPH2 (Ser 19) is recommended for detection of Ser 19 phosphorylated TPH2 of mouse, rat, zebrafish and bovine 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)].

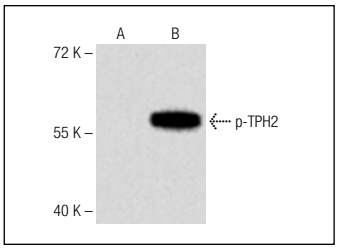
Suitable for use as control antibody for TPH2 siRNA (m): sc-61700, TPH2 shRNA Plasmid (m): sc-61700-SH and TPH2 shRNA (m) Lentiviral Particles: sc-61700-V.

Molecular Weight of p-TPH2: 56 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), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



p-TPH2 (Ser 19): sc-135717. Western blot analysis of untreated (**A**) and CaMKII-treated (**B**) rat recombinant TPH2.

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.