SANTA CRUZ BIOTECHNOLOGY, INC.

TPH2 (D-22): sc-134102

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.

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 (human) mapping to 12q21.1.

SOURCE

TPH2 (D-22) is an affinity purified rabbit polyclonal antibody raised against synthetic TPH2 peptide of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

TPH2 (D-22) is recommended for detection of TPH2 of human and canine 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TPH2 siRNA (h): sc-61699, TPH2 shRNA Plasmid (h): sc-61699-SH and TPH2 shRNA (h) Lentiviral Particles: sc-61699-V.

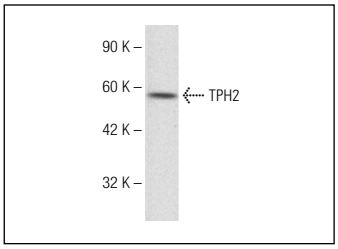
Molecular Weight of TPH2: 56 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

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).

DATA



TPH2 (D-22): sc-134102. Western blot analysis of TPH2 expression in Hep G2 whole cell lysate.

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.