SANTA CRUZ BIOTECHNOLOGY, INC.

DBH (N-19): sc-7486

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Dopamine β-hydroxylase (DBH) catalyzes the conversion of dopamine to noradrenaline in the biosynthesis of catecholamines. DBH is selectively expressed in noradrenergic and adrenergic neurons, as well as in neuroendocrine cells, and it serves as a specific protein marker for noradrenergic processes. The active form of DBH is a homotetramer, which is found in the lumen of synaptic vesicles of corresponding nerve cells, where it localizes to both the membrane and cytosol. DBH is induced by nerve growth factor and Insulin growth factor-1 and is regulated by intracellular second messengers protein kinase A, cyclic AMP, diacyl glycerol and Ca^{2+}. Expression of DBH is transcriptionally mediated by Sp1, CREB and AP-1 proteins, including c-Fos, c-Jun and JunD.

REFERENCES

1. Lamouroux, A., et al. 1987. The primary structure of human dopamine β-hydroxylase: insights into the relationship between the soluble and the membrane-bound forms of the enzyme. EMBO J. 6: 3931-3937.
2. Kobayashi, K., et al. 1989. Human dopamine β-hydroxylase gene: two mRNA types having different 3'-terminal regions are produced through alternative polyadenylation. Nucleic Acids Res. 17: 1089-1102.
3. McMahon, A., et al. 1990. Rat dopamine β-hydroxylase: molecular cloning and characterization of the cDNA and regulation of the mRNA by reserpine. J. Neurosci. Res. 25: 395-404.
4. Hwang, O., et al. 1995. Induction of gene expression of the catcholamine-synthesizing enzymes by Insulin-like growth factor-I. J. Neurochem. 65: 1988-1996.
5. Kim, H.S., et al. 1998. Noradrenergic-specific transcription of the dopamine β-hydroxylase gene requires synergy of mulitple *cis*-acting elements including at least two Phox2a-binding sites. J. Neurosci. 18: 8247-8260.

CHROMOSOMAL LOCATION

Genetic locus: DBH (human) mapping to 9q34.2; Dbh (mouse) mapping to 2 A3.

SOURCE

DBH (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of DBH 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-7486 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

DBH (N-19) is recommended for detection of DBH 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).

Suitable for use as control antibody for DBH siRNA (h): sc-35179, DBH siRNA (m): sc-35180, DBH shRNA Plasmid (h): sc-35179-SH, DBH shRNA Plasmid (m): sc-35180-SH, DBH shRNA (h) Lentiviral Particles: sc-35179-V and DBH shRNA (m) Lentiviral Particles: sc-35180-V.

Molecular Weight of cleaved DBH: 78 kDa.

Molecular Weight of amphiphilic DBH: 84 kDa.

Positive Controls: PC-12 cell lysate: sc-2250 or rat adrenal gland tissue extract.

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.

SELECT PRODUCT CITATIONS

1. Kitazawa, A., et al. 2007. Characterization of neurons differentiated from mouse embryonic stem cells using conditioned medium of dorsal root ganglia. J. Biosci. Bioeng. 104: 257-262.
2. Goddard, M., et al. 2008. Monoamine transporter and enzyme expression in the medial temporal lobe and frontal cortex following chronic bilateral vestibular loss. Neurosci. Lett. 437: 107-110.

PROTOCOLS

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