

# DBH (R-19): sc-7487

## BACKGROUND

Dopamine  $\beta$ -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  $\beta$ -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  $\beta$ -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  $\beta$ -hydroxylase: molecular cloning and characterization of the cDNA and regulation of the mRNA by reserpine. *J. Neurosci. Res.* 25: 395-404.

## CHROMOSOMAL LOCATION

Genetic locus: Dbh (rat) mapping to 3p12.

## SOURCE

DBH (R-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of DBH of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7487 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

DBH (R-19) is recommended for detection of dopamine  $\beta$ -hydroxylase of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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).

Molecular Weight of cleaved DBH: 78 kDa.

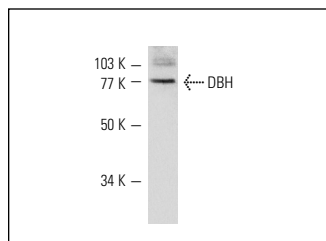
Molecular Weight of amphiphilic DBH: 84 kDa.

Positive Controls: PC-12 cell lysate: sc-2250.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



DBH (R-19): sc-7487. Western blot analysis of DBH expression in PC-12 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Frankhauser, P., et al. 2006. Characterization of the neuronal dopamine transporter DAT in human blood platelets. *Neurosci. Lett.* 399: 197-201.
2. Silva, E.J., et al. 2010. Glucocorticoid receptor in the rat epididymis: expression, cellular distribution and regulation by steroid hormones. *Mol. Cell. Endocrinol.* 325: 64-77.

## 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.

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Try **DBH (DBH 41): sc-47707**, our highly recommended monoclonal alternative to DBH (R-19).