

DBH (A-9): sc-365710

BACKGROUND

Dopamine β -hydroxylase (DBH) catalyzes the conversion of dopamine to norepinephrine 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 catecholamine-synthesizing enzymes by Insulin-like growth factor-I. *J. Neurochem.* 65: 1988-1996.

CHROMOSOMAL LOCATION

Genetic locus: DBH (human) mapping to 9q34.2.

SOURCE

DBH (A-9) is a mouse monoclonal antibody raised against amino acids 391-603 mapping near the C-terminus of DBH of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DBH (A-9) is available conjugated to agarose (sc-365710 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365710 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365710 PE), fluorescein (sc-365710 FITC), Alexa Fluor[®] 488 (sc-365710 AF488), Alexa Fluor[®] 546 (sc-365710 AF546), Alexa Fluor[®] 594 (sc-365710 AF594) or Alexa Fluor[®] 647 (sc-365710 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365710 AF680) or Alexa Fluor[®] 790 (sc-365710 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

DBH (A-9) is recommended for detection of DBH of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

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

Molecular Weight of cleaved DBH form: 78 kDa.

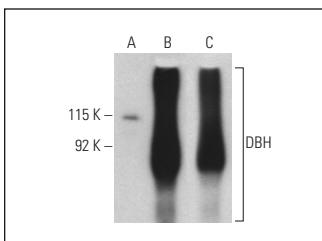
Molecular Weight of amphiphilic DBH form: 84 kDa.

Positive Controls: DBH (h): 293T Lysate: sc-159870 or human adrenal gland extract: sc-363761.

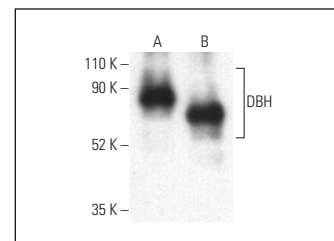
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 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 m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



DBH (A-9): sc-365710. Western blot analysis of DBH expression in non-transfected 293T: sc-117752 (A) and human DBH transfected 293T: sc-159870 (B) whole cell lysates and human adrenal gland tissue extract (C). Detection reagent used: m-IgG₁ BP-HRP: sc-525408.



DBH (A-9): sc-365710. Western blot analysis of human recombinant DBH expressed in HEK293T (A) and human recombinant DBH expressed in *E. coli* (B).

SELECT PRODUCT CITATIONS

1. Gokozan, H.N., et al. 2016. Area postrema undergoes dynamic postnatal changes in mice and humans. *J. Comp. Neurol.* 524: 1259-1269.
2. Mpekoulis, G., et al. 2021. Association of hepatitis C virus replication with the catecholamine biosynthetic pathway. *Viruses* 13: 2139.
3. Cui, K., et al. 2021. Restoration of noradrenergic function in Parkinson's disease model mice. *ASN Neuro* 13: 17590914211009730.

RESEARCH USE

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