SignalSilence® Dopamine β-Hydroxylase (DBH) siRNA I

#7664 Store at -20°C

☑ 10 µM in 300 µl
(100 transfections)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not For Use In Diagnostic Procedures.

Species Cross-Reactivity: H (M, Mk)

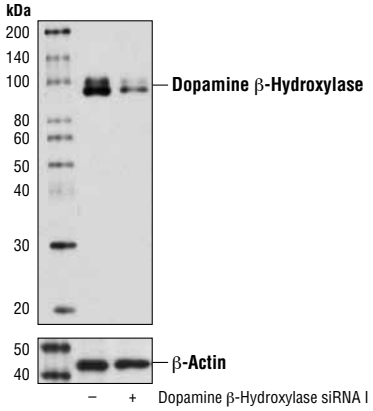
Description: SignalSilence® Dopamine β-Hydroxylase (DBH) siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit dopamine β-hydroxylase expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: Dopamine β-Hydroxylase (DBH) is an enzyme of the copper type II ascorbate-dependent mono-oxygenase family. This enzyme forms homotetramers composed of two noncovalently bound disulfide-linked dimers and is found as both membrane-associated and soluble forms (1-3). The soluble form is present in the lumen of secretory granules (4) and is released from cells by exocytosis (5). DBH converts dopamine to noradrenaline (6). Deficiency in this enzyme causes a rare disease characterized by a complete absence of noradrenaline and adrenaline in plasma together with increased plasma dopamine levels (7). Orthostatic hypotension, the main symptom of DBH deficiency, can be alleviated by administration of dihydroxyphenylserine, a synthetic precursor of noradrenaline (8).

Specificity/Sensitivity: SignalSilence® Dopamine β-Hydroxylase (DBH) siRNA I inhibits human, mouse, and monkey dopamine β-hydroxylase expression.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® Dopamine β-Hydroxylase (DBH) siRNA I 48 to 72 hours prior to cell lysis. For transfection procedure, follow protocol provided by the transfection reagent manufacturer. Please feel free to contact CST with any questions on use.

Quality Control: Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.



Western blot analysis of extracts from SH-SY5Y cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® Dopamine β-Hydroxylase (DBH) siRNA I (+), using Dopamine β-Hydroxylase (DBH) Antibody #8586 (upper) or β-Actin (13E5) Rabbit mAb #4970 (lower). The Dopamine β-Hydroxylase (DBH) Antibody confirms silencing of dopamine β-hydroxylase expression, while the β-Actin (13E5) Rabbit mAb is used as a loading control.

Entrez-Gene ID #1621
Swiss-Prot Acc. #P09172

Storage: Dopamine ß-Hydroxylase (DBH) siRNA I is supplied in RNAse-free water. *Aliquot and store at -20°C.*

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Smith, W.J. and Kirshner, N. (1967) *Mol Pharmacol* 3, 52-62.

(2) Lagercrantz, H. (1976) *Neuroscience* 1, 81-92.

(3) Winkler, H. (1976) *Neuroscience* 1, 65-80.

(4) Laduron, P.M. (1975) *FEBS Lett* 52, 132-4.

(5) Weinshilboum, R.M. et al. (1971) *Science* 174, 1349-51.

(6) Kaufman, S. and Friedman, S. (1965) *Pharmacol Rev* 17, 71-100.

(7) Robertson, D. et al. (1986) *N Engl J Med* 314, 1494-7.

(8) Biaggioni, I. and Robertson, D. (1987) *Lancet* 2, 1170-2.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.