

DARPP-32 siRNA (h): sc-35173

BACKGROUND

Dopaminergic signaling pathways, which are essential for multiple brain functions, are abnormal in several neurological disorders, such as schizophrenia, Parkinson's disease and drug abuse. DARPP-32 (for Dopamine and adenosine 3',5'-monophosphate-regulated phosphoprotein) is abundant in neurons that receive dopaminergic input. Activation of PKA and the consequent phosphorylation of DARPP-32 on threonine occurs in response to Dopamine acting upon D1-like receptors. Dopamine interaction with D2-like receptors results in the inhibition of PKA activation, the activation of protein phosphatase 2B and the consequent dephosphorylation of DARPP-32. Neurotransmitters other than Dopamine may also be able to stimulate the phosphorylation or dephosphorylation of DARPP-32. Phosphorylated DARPP-32 is a potent inhibitor of PP-1.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R1B (human) mapping to 17q12.

PRODUCT

DARPP-32 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DARPP-32 shRNA Plasmid (h): sc-35173-SH and DARPP-32 shRNA (h) Lentiviral Particles: sc-35173-V as alternate gene silencing products.

For independent verification of DARPP-32 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35173A, sc-35173B and sc-35173C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

DARPP-32 siRNA (h) is recommended for the inhibition of DARPP-32 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

DARPP-32 (H-3): sc-271111 is recommended as a control antibody for monitoring of DARPP-32 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DARPP-32 gene expression knockdown using RT-PCR Primer: DARPP-32 (h)-PR: sc-35173-PR (20 μ l, 581 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

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- Lenz, G., et al. 2018. t-DARPP activates IGF-1R signaling to regulate glucose metabolism in trastuzumab-resistant breast cancer cells. *Clin. Cancer Res.* 24: 1216-1226.
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- Zhu, S., et al. 2020. Silencing of miR490-3p by *H. pylori* activates DARPP-32 and induces resistance to gefitinib. *Cancer Lett.* E-published.

RESEARCH USE

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

PROTOCOLS

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