

DPP7 siRNA (h): sc-62232

BACKGROUND

Dipeptidyl peptidases (DPPs) mediate regulatory activity of their substrates and have been linked to a variety of diseases including type 2 diabetes, obesity and cancer. DPPs have post-proline dipeptidyl aminopeptidase activity, cleaving Xaa-Pro dipeptides from the N-termini of proteins. DPPs can bind specific voltage-gated potassium channels and alter their expression and biophysical properties and may also influence T cells. DPP proteins include DPP1, DPP2, DPP3, DPP7, DPP10, DPPX and CD26. DPP7 (dipeptidyl-peptidase 7), also known as DPP2, DPPII or QPP (quiescent cell proline dipeptidase), is expressed in quiescent lymphocytes and localizes to lysosomes. In response to calcium release, DPP7 can be secreted in its active form. DPP7 exists as a homodimer via its leucine zipper motif and is involved in the degradation of oligopeptides. DPP7 is essential for lymphocyte survival, as the inhibition of DPP7 results in quiescent cell apoptosis.

REFERENCES

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- Rosenblum, J.S., et al. 2003. Prolyl peptidases: a serine protease subfamily with high potential for drug discovery. *Curr. Opin. Chem. Biol.* 7: 496-504.
- Hu, Y., et al. 2005. Synthesis and structure-activity relationship of N-alkyl Gly-boro-Pro inhibitors of DPP4, FAP, and DPP7. *Bioorg. Med. Chem. Lett.* 15: 4239-4242.
- Shreder, K.R., et al. 2005. Boro-norleucine as a P1 residue for the design of selective and potent DPP7 inhibitors. *Bioorg. Med. Chem. Lett.* 15: 4256-4260.
- Maes, M.B., et al. 2005. Kinetic investigation of human dipeptidyl peptidase II (DPPII)-mediated hydrolysis of dipeptide derivatives and its identification as quiescent cell proline dipeptidase (QPP)/dipeptidyl peptidase 7 (DPP7). *Biochem. J.* 386: 315-324.

CHROMOSOMAL LOCATION

Genetic locus: DPP7 (human) mapping to 9q34.3.

PRODUCT

DPP7 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 DPP7 shRNA Plasmid (h): sc-62232-SH and DPP7 shRNA (h) Lentiviral Particles: sc-62232-V as alternate gene silencing products.

For independent verification of DPP7 (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-62232A, sc-62232B and sc-62232C.

PROTOCOLS

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

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

DPP7 siRNA (h) is recommended for the inhibition of DPP7 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

DPP7 (H-8): sc-390008 is recommended as a control antibody for monitoring of DPP7 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 DPP7 gene expression knockdown using RT-PCR Primer: DPP7 (h)-PR: sc-62232-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Schepsky, A., et al. 2020. Melflufen, a peptide-conjugated alkylator, is an efficient anti-neo-plastic drug in breast cancer cell lines. *Cancer Med.* E-published.

RESEARCH USE

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