SANTA CRUZ BIOTECHNOLOGY, INC.

DPP10 siRNA (m): sc-62229

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 DPRP1, DPRP2, DPP3, DPP7, DPP10, DPPX and CD26. DPP10 (dipeptidyl-peptidase 10), also known as DPRP3 (dipeptidyl peptidase IV-related protein 3), DPL2 or DPPY, is a non-functional dipeptidyl peptidase which can bind to the potassium channels KV4.1 and KV4.2. It is a single-pass type II membrane protein expressed in spinal cord, adrenal glands, pancreas and brain tissues and may act as a modulator for cell surface expression and activity of KV4.1 and KV4.2.

REFERENCES

1. Qi, S.Y., et al. 2003. Cloning and characterization of dipeptidyl peptidase 10, a new member of an emerging subgroup of serine proteases. Biochem. J. 373: 179-189.
2. Jerng, H.H., et al. 2004. Modulation of KV4.2 channel expression and gating by dipeptidyl peptidase 10 (DPP10). Biophys. J. 87: 2380-2396.
3. Jerng, H.H., et al. 2005. Multiprotein assembly of KV4.2, KChIP3 and DPP10 produces ternary channel complexes with ISA-like properties. J. Physiol. 568: 767-788.
4. Zagha, E., et al. 2005. DPP10 modulates KV4-mediated A-type potassium channels. J. Biol. Chem. 280: 18853-18861.
5. Takimoto, K., et al. 2006. Species and tissue differences in the expression of DPPY splicing variants. Biochem. Biophys. Res. Commun. 348: 1094-1100.
6. Chen, T., et al. 2006. Molecular characterization of a novel dipeptidyl peptidase like 2-short form (DPL2-s) that is highly expressed in the brain and lacks dipeptidyl peptidase activity. Biochim. Biophys. Acta 1764: 33-43.

CHROMOSOMAL LOCATION

Genetic locus: Dpp10 (mouse) mapping to 1 E2.3.

PRODUCT

DPP10 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DPP10 shRNA Plasmid (m): sc-62229-SH and DPP10 shRNA (m) Lentiviral Particles: sc-62229-V as alternate gene silencing products.

For independent verification of DPP10 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62229A, sc-62229B and sc-62229C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

DPP10 siRNA (m) is recommended for the inhibition of DPP10 expression in mouse 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 µM in 66 µl. 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

DPP10 (C-1): sc-393442 is recommended as a control antibody for monitoring of DPP10 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DPP10 gene expression knockdown using RT-PCR Primer: DPP10 (m)-PR: sc-62229-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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