SANTA CRUZ BIOTECHNOLOGY, INC.

PPP2R3A siRNA (m): sc-108917

BACKGROUND

PPP2R3A (serine/threonine-protein phosphatase 2A regulatory subunit B'' subunit α), also known as PR72, PR130 or PPP2R3, is a 1,150 amino acid protein that contains two EF-hand domains. Expressed in heart, brain, placenta, lung, muscle and kidney, PPP2R3A is a regulatory subunit of protein phosphatase 2 (PP2A), one of four major Ser/Thr phosphatases. PP2A is composed of three structural subunits: structural subunit A, catalytic subunit C and regulatory subunit B. The regulatory subunit is encoded by a set of genes belonging to the B/PR55, B'/PR61, and B''/PR72 families. Acting as a regulatory subunit of PP2A, PPP2R3A may function in the regulation of substrate selectivity and catalytic activity. Belonging to the B'' family, PPP2R3A exists as two alternatively spliced isoforms and is encoded by a gene that maps to mouse chromosome 9 E4.

REFERENCES

1. Hendrix, P., et al. 1993. Structure and expression of a 72-kDa regulatory subunit of protein phosphatase 2A. Evidence for different size forms produced by alternative splicing. J. Biol. Chem. 268: 15267-15276.
2. Creyghton, M.P., et al. 2005. PR72, a novel regulator of Wnt signaling required for Naked cuticle function. Genes Dev. 19: 376-386.
3. Xing, Y., et al. 2006. Structure of protein phosphatase 2A core enzyme bound to tumor-inducing toxins. Cell 127: 341-353.
4. Esplin, E.D., et al. 2006. The glycine 90 to aspartate alteration in the Aβ subunit of PP2A (PPP2R1B) associates with breast cancer and causes a deficit in protein function. Genes Chromosomes Cancer 45: 182-190.
5. Nunbhakdi-Craig, V., et al. 2007. Expression of protein phosphatase 2A mutants and silencing of the regulatory B α subunit induce a selective loss of acetylated and detyrosinated microtubules. J. Neurochem. 101: 959-971.
6. Ahn, J.H., et al. 2007. The B''/PR72 subunit mediates Ca^{2+}-dependent dephosphorylation of DARPP-32 by protein phosphatase 2A. Proc. Natl. Acad. Sci. USA 104: 9876-9881.

CHROMOSOMAL LOCATION

Genetic locus: Ppp2r3a (mouse) mapping to 9 E4.

PRODUCT

PPP2R3A siRNA (m) is a target-specific 19-25 nt siRNA 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 PPP2R3A shRNA Plasmid (m): sc-108917-SH and PPP2R3A shRNA (m) Lentiviral Particles: sc-108917-V as alternate gene silencing products.

For independent verification of PPP2R3A (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-108917A, sc-108917B and sc-108917C.

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

PPP2R3A siRNA (m) is recommended for the inhibition of PPP2R3A 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PPP2R3A gene expression knockdown using RT-PCR Primer: PPP2R3A (m)-PR: sc-108917-PR (20 µl, 528 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Nguyen, A., et al. 2024. The protein phosphatase-2A subunit PR130 is involved in the formation of cytotoxic protein aggregates in pancreatic ductal adenocarcinoma cells. Cell Commun. Signal. 22: 217.

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.