

PP6R3 siRNA (h): sc-96346

BACKGROUND

PP6R3, also known as PPP6R3 (protein phosphatase 6, regulatory subunit 3), is an 873 amino acid protein that belongs to the SAPS family. PP6R3 contains 22 exons and exists as 6 alternatively spliced isoforms. Localizing to cytoplasm and nucleus, PP6R3 is ubiquitously expressed and may play an important role in maintaining immune self-tolerance. PP6R3 functions as a regulatory subunit of protein phosphatase 6 (PP6), which is likely a heterotrimeric complex formed by a catalytic subunit, a SAPS domain-containing subunit (PP6R) and an ankyrin repeat-domain containing regulatory subunit (ARS). PP6R3 enhances cyclin G₁ gene expression and DNA synthesis, and partially abrogates the G₁ cell cycle delay. PP6R3 interacts with both PP6 and ANKRD28, and may function as a scaffolding PP6 subunit. The gene that encodes PP6R3 maps to human chromosome 11q13.2.

REFERENCES

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3. Stefansson, B., Ohama, T., Daugherty, A.E. and Brautigan, D.L. 2008. Protein phosphatase 6 regulatory subunits composed of ankyrin repeat domains. *Biochemistry* 47: 1442-1451.
4. Guernon, J., Derewenda, U., Edelson, J.R. and Brautigan, D.L. 2009. Mapping of protein phosphatase-6 association with its SAPS domain regulatory subunit using a model of helical repeats. *BMC Biochem.* 10: 24.
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6. Morales-Johansson, H., Puria, R., Brautigan, D.L. and Cardenas, M.E. 2009. Human protein phosphatase PP6 regulatory subunits provide Sit4-dependent and rapamycin-sensitive sap function in *Saccharomyces cerevisiae*. *PLoS ONE* 4: e6331.
7. Douglas, P., Zhong, J., Ye, R., Moorhead, G.B., Xu, X. and Lees-Miller, S.P. 2010. Protein phosphatase 6 interacts with the DNA-dependent protein kinase catalytic subunit and dephosphorylates γ-H2AX. *Mol. Cell. Biol.* 30: 1368-1381.
8. Peng, A. and Maller, J.L. 2010. Serine/threonine phosphatases in the DNA damage response and cancer. *Oncogene* 29: 5977-5988.

CHROMOSOMAL LOCATION

Genetic locus: PPP6R3 (human) mapping to 11q13.2.

PROTOCOLS

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

PRODUCT

PP6R3 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 μM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PP6R3 shRNA Plasmid (h): sc-96346-SH and PP6R3 shRNA (h) Lentiviral Particles: sc-96346-V as alternate gene silencing products.

For independent verification of PP6R3 (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-96346A, sc-96346B and sc-96346C.

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

PP6R3 siRNA (h) is recommended for the inhibition of PP6R3 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 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 PP6R3 gene expression knockdown using RT-PCR Primer: PP6R3 (h)-PR: sc-96346-PR (20 μl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Ohba, S., Johannessen, T.A., Chatla, K., Yang, X., Pieper, R.O. and Mukherjee, J. 2020. Phosphoglycerate mutase 1 activates DNA damage repair via regulation of WIP1 activity. *Cell Rep.* 31: 107518.

RESEARCH USE

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