SANTA CRUZ BIOTECHNOLOGY, INC.

PPP4R4 siRNA (h): sc-92184

BACKGROUND

PPP4R4 (protein phosphatase 4, regulatory subunit 4), also known as PP4R4, serine/threonine-protein phosphatase 4 regulatory subunit 4 or HEAT-like repeat-containing protein, is an 873 amino acid protein that exists as two alternatively spliced isoforms. PPP4R4 contains three HEAT repeats, which are tandemly repeated, 37-47 amino acid long modules that occur in a variety of cytoplasmic proteins. HEAT repeats form a rod-like helical structure and likely operate as protein-protein interaction surfaces. PPP4R4 functions as a putative regulatory subunit of serine/threonine-protein phosphatase 4, which occurs in different assemblies of the catalytic and one or more regulatory subunits. PPP4R4 forms a novel cytosolic complex with PP4c, independent of complexes containing PP4R1, PP4R2/PP4R3 and α4, with the PP4c regulatory subunits displaying different modes of interaction with the catalytic subunit. PPP4R4 may perform cell- or tissue-specific functions and may be involved in cognitive processes. Highly conserved, the gene that encodes PPP4R4 maps to human chromosome 14q32.13.

REFERENCES

1. Andrade, M.A., et al. 2001. Comparison of ARM and HEAT protein repeats. J. Mol. Biol. 309: 1-18.
2. Namciu, S.J., et al. 2004. Sequence organization and matrix attachment regions of the human serine protease inhibitor gene cluster at 14q32.1. Mamm. Genome 15: 162-178.
3. Baxter, E.W., et al. 2005. Formation of a large, complex domain of histone hyperacetylation at human 14q32.1 requires the serpin locus control region. Nucleic Acids Res. 33: 3313-3322.
4. Edwards, C.A., et al. 2007. The evolution of imprinting: chromosomal mapping of orthologues of mammalian imprinted domains in monotreme and marsupial mammals. BMC Evol. Biol. 7: 157.
5. Zhao, H., et al. 2007. The locus control region activates serpin gene expression through recruitment of liver-specific transcription factors and RNA polymerase II. Mol. Cell. Biol. 27: 5286-5295.
6. Chen, G.I., et al. 2008. PP4R4/KIAA1622 forms a novel stable cytosolic complex with phosphoprotein phosphatase 4. J. Biol. Chem. 283: 29273-29284.
7. Lee, D.H., et al. 2010. A PP4 phosphatase complex dephosphorylates RPA2 to facilitate DNA repair via homologous recombination. Nat. Struct. Mol. Biol. 17: 365-372.

CHROMOSOMAL LOCATION

Genetic locus: PPP4R4 (human) mapping to 14q32.12.

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.

PRODUCT

PPP4R4 siRNA (h) is a pool of 2 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 PPP4R4 shRNA Plasmid (h): sc-92184-SH and PPP4R4 shRNA (h) Lentiviral Particles: sc-92184-V as alternate gene silencing products.

For independent verification of PPP4R4 (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-92184A and sc-92184B.

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

PPP4R4 siRNA (h) is recommended for the inhibition of PPP4R4 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 PPP4R4 gene expression knockdown using RT-PCR Primer: PPP4R4 (h)-PR: sc-92184-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.