SANTA CRUZ BIOTECHNOLOGY, INC.

CDK5RAP3 siRNA (h): sc-93759

BACKGROUND

CDK5RAP3 (cyclin dependent kinase 5 regulatory subunit-associated protein 3), also designated C53 or IC53, may be involved in neuronal differentiation, cell proliferation and DNA repair. The role CDK5RAP3 plays in neuronal differentiation may be attributed to its interaction with the Cdk5 activator protein called p35. p35 physically associates with Cdk5 to activate enzymatic activity. Cdk5 activity increases significantly during neuronal differentiation. Upon transfection, CDK5RAP3 is capable of increasing the rate of cell proliferation, suggesting that it may play a role in tumorigenesis. CDK5RAP3 is a regulatory component of the G_2/M DNA damage checkpoint in response to genotoxic stress. CDK5RAP3 is expressed in brain, heart, placenta, liver, skeletal muscle, lung, kidney and pancreas and is overexpressed in tumor tissue. Three named isoforms exist for CDK5RAP3 as a result of alternative splicing events. CDK5RAP3 contains two leucine zipper motifs, putative phosphorylation and potential N-myristoylation sites.

REFERENCES

1. Ching, Y.P., et al. 2000. Cloning of three novel neuronal Cdk5 activator binding proteins. Gene 242: 285-294.
2. Wang, X., et al. 2000. Identification of a common protein association region in the neuronal Cdk5 activator. J. Biol. Chem. 275: 31763-31769.
3. Chen, J., et al. 2002. A novel gene IC53 stimulates ECV304 cell proliferation and is upregulated in failing heart. Biochem. Biophys. Res. Commun. 294: 161-166.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608202. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Xie, Y.H., et al. 2003. Cloning and characterization of human IC53-2, a novel CDK5 activator binding protein. Cell Res. 13: 83-91.
6. Jiang, H., et al. 2005. Cdk5 activator-binding protein C.regulates apoptosis induced by genotoxic stress via modulating the G_2/M DNA damage checkpoint. J. Biol. Chem. 280: 20651-20659.
7. Stav, D., et al. 2007. Usefulness of CDK5RAP3, CCNB2, and RAGE genes for the diagnosis of lung adenocarcinoma. Int. J. Biol. Markers 22: 108-113.

CHROMOSOMAL LOCATION

Genetic locus: CDK5RAP3 (human) mapping to 17q21.32.

PRODUCT

CDK5RAP3 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 CDK5RAP3 shRNA Plasmid (h): sc-93759-SH and CDK5RAP3 shRNA (h) Lentiviral Particles: sc-93759-V as alternate gene silencing products.

For independent verification of CDK5RAP3 (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-93759A, sc-93759B and sc-93759C.

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

CDK5RAP3 siRNA (h) is recommended for the inhibition of CDK5RAP3 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.

GENE EXPRESSION MONITORING

CDK5RAP3 (E-7): sc-271776 is recommended as a control antibody for monitoring of CDK5RAP3 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 CDK5RAP3 gene expression knockdown using RT-PCR Primer: CDK5RAP3 (h)-PR: sc-93759-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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