SANTA CRUZ BIOTECHNOLOGY, INC.

CrkRS siRNA (h): sc-44343

BACKGROUND

CrkRS (Cdc2-related kinase, arginine/serine-rich, also designated CRK7 and CRKR) is an ubiquitous protein that appears to localize to the nucleus and link transcription and splicing machinery. CrkRS belongs to the serine/threonine protein kinase family and Cdc2/Cdkx subfamily. CrkRS has extensive proline-rich regions that resemble SH3 and WW domain binding sites, and an RS domain that is characteristic of splicing factors. The protein kinase domain of CrkRS is 89% identical to the CHED protein kinase, also designated CDC2L5 and cell division cycle 2-like 5 (cholinesterase-related cell division controller), however outside the kinase domains the two proteins are unique. Cell cycle control kinases can phosphorylate proteins important for differentiation and apoptosis and provide connections between proliferation, differentiation, apoptosis, and neurocytoskeleton dynamics.

REFERENCES

1. Lapidot-Lifson, Y., et al. 1992. Cloning and antisense oligodeoxynucleotide inhibition of a human homolog of Cdc2 required in hematopoiesis. Proc. Natl. Acad. Sci. USA 89: 579-583.
2. Meyerson, M., et al. 1992. A family of human Cdc2-related protein kinases. EMBO J. 11: 2909-2917.
3. Ershler, M., et al. 1993. Novel Cdc2-related protein kinases produced in murine hematopoietic stem cells. Gene 124: 305-306.
4. Nagase, T., et al. 1998. Prediction of the coding sequences of unidentified human genes. XII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 5: 355-364.

CHROMOSOMAL LOCATION

Genetic locus: CDK12 (human) mapping to 17q12.

PRODUCT

CrkRS 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 CrkRS shRNA Plasmid (h): sc-44343-SH and CrkRS shRNA (h) Lentiviral Particles: sc-44343-V as alternate gene silencing products.

For independent verification of CrkRS (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-44343A, sc-44343B and sc-44343C.

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

CrkRS siRNA (h) is recommended for the inhibition of CrkRS 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 CrkRS gene expression knockdown using RT-PCR Primer: CrkRS (h)-PR: sc-44343-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. Blazek, D., et al. 2011. The cyclin K/Cdk12 complex maintains genomic stability via regulation of expression of DNA damage response genes. Genes Dev. 25: 2158-2172.
2. Eifler, T.T., et al. 2015. Cyclin-dependent kinase 12 increases 3' end processing of growth factor-induced c-Fos transcripts. Mol. Cell. Biol. 35: 468-478.
3. Ekumi, K.M., et al. 2015. Ovarian carcinoma CDK12 mutations misregulate expression of DNA repair genes via deficient formation and function of the CDK12/CycK complex. Nucleic Acids Res. 43: 2575-2589.
4. Albert, T.K., et al. 2016. The establishment of a hyperactive structure allows the tumour suppressor protein p53 to function through P-TEFb during limited Cdk9 kinase inhibition. PLoS ONE 11: e0146648.
5. Greifenberg, A.K., et al. 2016. Structural and functional analysis of the Cdk13/cyclin K complex. Cell Rep. 14: 320-331.
6. Donnio, L.M., et al. 2019. CSB-dependent cyclin-dependent kinase 9 degradation and RNA polymerase II phosphorylation during transcription-coupled repair. Mol. Cell. Biol. 39: e00225-18.

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.