SANTA CRUZ BIOTECHNOLOGY, INC.

Cdk10 siRNA (h): sc-72226

BACKGROUND

Cell cycle progression is controlled, in part, by a family of cyclin dependent kinases (Cdks) that work to phosphorylate key substrates involved in each phase of cell cycle progression. Cdks are the catalytic subunits of serine/threonine protein kinases, a large family of proteins that act as regulators of the eukaryotic cell cycle. Several Cdk family members have been identified, including Cdc2 p34, Cdk2-10, PITSLRE, PCTAIRE-1–3, KKIAMRE, KKIALRE, CDKN3 and NKIAMRE. Cdk10, also called PISSLRE, is a Cdc2-related kinase whose gene has been shown to encode two isoforms, each having a different function within the cell cycle. Although the two isoforms share nearly identical amino acid seqeunces, they differ at the C- and N-terminals. One Cdk isoform interacts with the transcription factor Ets-2, thereby modulating its transactivation activity, while the other is thought to have a role at the G_2/M transition. Cdk10 mRNA has been shown to have the highest expression in lung, liver and kidney tissue, with gene upregulation implicated in cases of non-Hodgkin's follicular lymphoma.

REFERENCES

1. Brambilla, R. and Draetta, G. 1994. Molecular cloning of PISSLRE, a novel putative member of the Cdk family of protein serine/threonine kinases. Oncogene 9: 3037-3041.
2. Sergère, J.C., et al. 2000. Human Cdk10 gene isoforms. Biochem. Biophys. Res. Commun. 276: 271-277.
3. Husson, H., et al. 2001. Gene expression profiling of follicular lymphoma and normal germinal center B cells using cDNA arrays. Blood 99: 282-289.
4. Kasten, M. and Giordano, A. 2001. Cdk10, a Cdc2-related kinase, associates with the Ets-2 transcription factor and modulates its transactivation activity. Oncogene 20: 1832-1838.
5. Guo, Z. and Stiller, J.W. 2004. Comparative genomics of cyclin-dependent kinases suggest co-evolution of the RNAP II C-terminal domain and CTD-directed Cdks. BMC Genomics 5: 69.

CHROMOSOMAL LOCATION

Genetic locus: CDK10 (human) mapping to 16q24.3.

PRODUCT

Cdk10 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 Cdk10 shRNA Plasmid (h): sc-72226-SH and Cdk10 shRNA (h) Lentiviral Particles: sc-72226-V as alternate gene silencing products.

For independent verification of Cdk10 (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-72226A, sc-72226B and sc-72226C.

PROTOCOLS

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

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

Cdk10 siRNA (h) is recommended for the inhibition of Cdk10 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 Cdk10 gene expression knockdown using RT-PCR Primer: Cdk10 (h)-PR: sc-72226-PR (20 µl, 567 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, F., et al. 2012. Identification of NME5 as a contributor to innate resistance to gemcitabine in pancreatic cancer cells. FEBS J. 279: 1261-1273.

RESEARCH USE

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