SANTA CRUZ BIOTECHNOLOGY, INC.

CdkL4 siRNA (m): sc-142230

BACKGROUND

Cell cycle progression is controlled in part by a family of cyclin proteins and cyclin dependent kinases (Cdks). Cdk proteins work in concert with the cyclins to phosphorylate key substrates involved in each phase of cell cycle progression. Another family of proteins, Cdk inhibitors, also plays a role in regulating the cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Cdks are considered potential targets for anti-cancer therapy due to their involvement with cell cycle regulation. Cdks are also involved in the regulation of transcription and mRNA processing. CdkL4 (cyclin-dependent kinase-like 4) is a 315 amino acid protein that belongs to the CMGC Ser/Thr protein kinase family and may be involved in cell cycle regulation.

REFERENCES

1. Pines, J. 1994. The cell cycle kinases. Semin. Cancer Biol. 5: 305-313.
2. Hirama, T., et al. 1995. Role of the cyclin-dependent kinase inhibitors in the development of cancer. Blood 86: 841-854.
3. Lees, E. 1995. Cyclin dependent kinase regulation. Curr. Opin. Cell Biol. 7: 773-780.
4. MacLachlan, T.K., et al. 1995. Cyclins, cyclin-dependent kinases and cdk inhibitors: implications in cell cycle control and cancer. Crit. Rev. Eukaryot. Gene Expr. 5: 127-156.
5. Ravitz, M.J., et al. 1997. Cyclin-dependent kinase regulation during G_1 phase and cell cycle regulation by TGF-β. Adv. Cancer Res. 71: 165-207.
6. Li, J.M., et al. 1999. Cell cycle regulatory molecules (cyclins, cyclin-dependent kinases and cyclin-dependent kinase inhibitors) and the cardiovascular system; potential targets for therapy? Eur. Heart J. 20: 406-420.
7. Liu, J., et al. 2000. Evolution of cyclin-dependent kinases (CDKs) and CDK-activating kinases (CAKs): differential conservation of CAKs in yeast and metazoa. Mol. Biol. Evol. 17: 1061-1074.
8. Lee, M.H., et al. 2001. Negative regulators of cyclin-dependent kinases and their roles in cancers. Cell. Mol. Life Sci. 58: 1907-1922.
9. Corellou, F., et al. 2001. Cell cycle-dependent control of polarised development by a cyclin-dependent kinase-like protein in the Fucus zygote. Development 128: 4383-4392.

CHROMOSOMAL LOCATION

Genetic locus: Cdkl4 (mouse) mapping to 17 E3.

PRODUCT

CdkL4 siRNA (m) 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 CdkL4 shRNA Plasmid (m): sc-142230-SH and CdkL4 shRNA (m) Lentiviral Particles: sc-142230-V as alternate gene silencing products.

For independent verification of CdkL4 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-142230A, sc-142230B and sc-142230C.

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

CdkL4 siRNA (m) is recommended for the inhibition of CdkL4 expression in mouse 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 CdkL4 gene expression knockdown using RT-PCR Primer: CdkL4 (m)-PR: sc-142230-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.