SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin L1 siRNA (h): sc-44902

BACKGROUND

Cell proliferation is controlled at specific stages of the cell cycle by distinct protein kinase complexes. These complexes consist of a catalytic subunit associating with a specific regulatory subunit to form the active kinase. The cyclins, which include cyclin A, B, C, D, E, F, G, H, I, K, L, T and their related proteins, including Dbf4, comprise the regulatory subunits of these kinase complexes. The controlled activation of the kinase complexes at various intervals of the cell cycle is regulated by the availability of the cyclins to the catalytic subunit. Unlike the catalytic subunit, which is expressed continually, the expression and stability of the regulatory subunit fluctuates depending on the stage of the cell-cycle and, thereby, regulates the kinase activity. Cyclin L1 is a ubiquitously expressed nuclear protein that can be detected in higher levels in thymus. In neck and head squamous cell carcinomas, cyclin L1 can be overexpressed and is therefore often considered a proto-oncogene. It interacts with POLR2A, CDC2L and SFRS2. Cyclin L1 plays a role in the mRNA splicing process regulation.

REFERENCES

1. Dickinson, L.A., et al. 2002. Cyclin L is an RS domain protein involved in pre-mRNA splicing. J. Biol. Chem. 277: 25465-25473.
2. Redon, R., et al. 2002. Amplicon mapping and transcriptional analysis pinpoint cyclin L as a candidate oncogene in head and neck cancer. Cancer Res. 62: 6211-6217.
3. de Graaf, K., et al. 2004. Characterization of cyclin L2, a novel cyclin with an arginine/serine-rich domain: phosphorylation by Dyrk1A and co-localization with splicing factors. J. Biol. Chem. 279: 4612-4624.
4. Yang, L., et al. 2004. Cyclin L2, a novel RNA polymerase II-associated cyclin, is involved in pre-mRNA splicing and induces apoptosis of human hepatocellular carcinoma cells. J. Biol. Chem. 279: 11639-11648.
5. Naaz, A., et al. 2004. Loss of cyclin-dependent kinase inhibitors produces adipocyte hyperplasia and obesity. FASEB J. 18: 1925-1927.
6. Sticht, C., et al. 2005. Amplification of Cyclin L1 is associated with lymph node metastases in head and neck squamous cell carcinoma (HNSCC). Br. J. Cancer 92: 770-774.

CHROMOSOMAL LOCATION

Genetic locus: CCNL1 (human) mapping to 3q25.31.

PRODUCT

cyclin L1 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 cyclin L1 shRNA Plasmid (h): sc-44902-SH and cyclin L1 shRNA (h) Lentiviral Particles: sc-44902-V as alternate gene silencing products.

For independent verification of cyclin L1 (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-44902A, sc-44902B and sc-44902C.

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

cyclin L1 siRNA (h) is recommended for the inhibition of cyclin L1 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

cyclin L1 (Q-1): sc-81843 is recommended as a control antibody for monitoring of cyclin L1 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 cyclin L1 gene expression knockdown using RT-PCR Primer: cyclin L1 (h)-PR: sc-44902-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.