

cyclin G2 siRNA (m): sc-37598

BACKGROUND

Cyclins are the regulatory subunits of Cdc2 p34 and related cyclin-dependent kinases (Cdks) which play critical roles in the control of cell cycle progression. The Cdc2-cyclin B complex controls the G₂ to M transition whereas Cdc2-cyclin A regulates S phase progression. Cyclin G contains a typical N terminal cyclin box and a carboxy terminal domain sequence homologous to the tyrosine phosphorylation site of the epidermal growth factor receptor. Cyclin G expression is induced within three hours after growth stimulation and remains elevated with no apparent cell cycle dependency. Cyclin G2 shares 53% amino acid sequence identity with cyclin G1. Peak expression of cyclin G2 is seen in late S phase, as opposed to cyclin G1 expression, which is constitutive.

REFERENCES

1. Pines, J., et al. 1990. Human cyclin A is adenovirus E1A-associated protein p60 and behaves differently from cyclin B. *Nature* 346: 760-763.
2. Fang, F., et al. 1991. Evidence that the G₁-S and G₂-M transitions are controlled by different Cdc2 proteins in higher eukaryotes. *Cell* 66: 731-742.
3. Koff, A., et al. 1991. Human cyclin E, a new cyclin that interacts with two members of the Cdc2 gene family. *Cell* 66: 1217-1228.
4. Girard, F., et al. 1991. Cyclin A is required for the onset of DNA replication in mammalian fibroblasts. *Cell* 67: 1169-1179.
5. Matsushime, H., et al. 1992. Identification and properties of an atypical catalytic subunit (p34^{PSK-J3}/Cdk4) for mammalian D type G1 cyclins. *Cell* 71: 323-334.
6. Xiong, Y., et al. 1992. D type cyclins associate with multiple protein kinases and the DNA replication and repair factor PCNA. *Cell* 71: 505-514.
7. Tamura, K., et al. 1993. Cyclin G: a new mammalian cyclin with homology to fission yeast Cig1. *Oncogene* 8: 2113-2118.
8. Horne, M.C., et al. 1996. Cyclin G1 and cyclin G2 comprise a new family of cyclins with contrasting tissue-specific and cell cycle-regulated expressions. *J. Biol. Chem.* 271: 6050-6061.

CHROMOSOMAL LOCATION

Genetic locus: Ccng2 (mouse) mapping to 5 E2.

PRODUCT

cyclin G2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see cyclin G2 shRNA Plasmid (m): sc-37598-SH and cyclin G2 shRNA (m) Lentiviral Particles: sc-37598-V as alternate gene silencing products.

For independent verification of cyclin G2 (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-37598A, sc-37598B and sc-37598C.

RESEARCH USE

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

cyclin G2 siRNA (m) is recommended for the inhibition of cyclin G2 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 μ M in 66 μ l. 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 cyclin G2 gene expression knockdown using RT-PCR Primer: cyclin G2 (m)-PR: sc-37598-PR (20 μ l). 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.