SANTA CRUZ BIOTECHNOLOGY, INC.

Speedy A siRNA (h): sc-94630

BACKGROUND

Speedy A, also known as SPDYA, SPDY1, Ringo3 or SPY1, is a 313 amino acid protein that localizes to the nucleus and belongs to the speedy/ringo family. Expressed at high levels in testis and at lower levels in brain, kidney, heart, bone marrow, colon, lung, liver spleen and placenta, Speedy A functions to regulate the G_1/S phase transition of the cell cycle, specifically by binding to and activating Cdc2 p34, Cdk2 and p27. Additionally, Speedy A mediates cell survival during DNA damage, suggesting that Speedy A plays a role in proper cell cycle progression throughout the life of the cell. Multiple isoforms of Speedy A exist due to alternative splicing events. The gene encoding Speedy A maps to human chromosome 2, which encodes over 1,400 genes and comprises nearly 8% of the human genome.

REFERENCES

1. Porter, L.A., et al. 2002. Human speedy: a novel cell cycle regulator that enhances proliferation through activation of Cdk2. J. Cell Biol. 157: 357-366.
2. Barnes, E.A., et al. 2003. Human SPY1 promotes survival of mammalian cells following DNA damage. Cancer Res. 63: 3701-3707.
3. Porter, L.A., et al. 2003. SPY1 interacts with $p27^{Kip1}$ to allow G_1/S progression. Mol. Biol. Cell 14: 3664-3674.
4. Cheng, A., et al. 2005. Identification and comparative analysis of multiple mammalian Speedy/ringo proteins. Cell Cycle 4: 155-165.
5. Nebreda, A.R. 2006. Cdk activation by non-cyclin proteins. Curr. Opin. Cell Biol. 18: 192-198.
6. Gastwirt, R.F., et al. 2006. Spy1 expression prevents normal cellular responses to DNA damage: inhibition of apoptosis and checkpoint activation. J. Biol. Chem. 281: 35425-35435.
7. Gastwirt, R.F., et al. 2007. Speedy/ringo regulation of Cdks in cell cycle, checkpoint activation and apoptosis. Cell Cycle 6: 1188-1193.
8. McAndrew, C.W., et al. 2007. SPY1 enhances phosphorylation and degradation of the cell cycle inhibitor p27. Cell Cycle 6: 1937-1945.

CHROMOSOMAL LOCATION

Genetic locus: SPDYA (human) mapping to 2p23.2.

PRODUCT

Speedy A 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 Speedy A shRNA Plasmid (h): sc-94630-SH and Speedy A shRNA (h) Lentiviral Particles: sc-94630-V as alternate gene silencing products.

For independent verification of Speedy A (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-94630A, sc-94630B and sc-94630C.

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 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

Speedy A siRNA (h) is recommended for the inhibition of Speedy A 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 Speedy A gene expression knockdown using RT-PCR Primer: Speedy A (h)-PR: sc-94630-PR (20 µl). 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.