SANTA CRUZ BIOTECHNOLOGY, INC.

p27 Kip1 siRNA (h): sc-29429

BACKGROUND

Cell cycle progression is regulated by a series of cyclin-dependent kinases consisting of catalytic subunits, designated Cdks, as well as activating subunits, designated cyclins. Orderly progression through the cell cycle requires the activation and inactivation of different cyclin-Cdks at appropriate times. A series of proteins has recently been described that function as "mitotic inhibitors". These include p21, the levels of which are elevated upon DNA damage in G_1 in a p53-dependent manner; p16; and a more recently described p16-related inhibitor designated p15. A p21-related protein, p27 Kip1, has been described as a negative regulator of G_1 progression and speculated to function as a possible mediator of TGFβ-induced G_1 arrest. p27 Kip1 interacts strongly with D-type cyclins and Cdk4 *in vitro* and, to a lesser extent, with cyclin E and Cdk2.

CHROMOSOMAL LOCATION

Genetic locus: CDKN1B (human) mapping to 12p13.1.

PRODUCT

p27 Kip1 siRNA (h) is a target-specific 19-25 nt siRNA 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 p27 Kip1 shRNA Plasmid (h): sc-29429-SH and p27 Kip1 shRNA (h) Lentiviral Particles: sc-29429-V as alternate gene silencing 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

p27 Kip1 siRNA (h) is recommended for the inhibition of p27 Kip1 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.

RESEARCH USE

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

GENE EXPRESSION MONITORING

p27 Kip1 (F-8): sc-1641 is recommended as a control antibody for monitoring of p27 Kip1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor p27 Kip1 gene expression knockdown using RT-PCR Primer: p27 Kip1 (h)-PR: sc-29429-PR (20 µl, 361 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Ding, Q., et al. 2005. p27 Kip1 and cyclin D1 are necessary for focal adhesion kinase regulation of cell cycle progression in glioblastoma cells propagated *in vitro* and *in vivo* in the scid mouse brain. J. Biol. Chem. 280: 6802-6815.
2. Lecanda, J., et al. 2009. TGFβ prevents proteasomal degradation of the cyclin-dependent kinase inhibitor p27 Kip1 for cell cycle arrest. Cell Cycle 8: 742-756.
3. Meng, Q., et al. 2010. Simian virus 40 T/t antigens and lamin A/C small-interfering RNA rescue the phenotype of an Epstein-Barr virus protein kinase (BGLF4) mutant. J. Virol. 84: 4524-4533.
4. Chien, M.H., et al. 2011. Terbinafine inhibits oral squamous cell carcinoma growth through anti-cancer cell proliferation and anti-angiogenesis. Mol. Carcinog. 51: 389-399.
5. Byun, S.W., et al. 2012. Helicobacter pylori decreases p27 expression through the delta opioid receptor-mediated inhibition of histone acetylation within the p27 promoter. Cancer Lett. 326: 96-104.
6. Zou, J., et al. 2013. Mitochondrion-associated protein LRPPRC suppresses the initiation of basal levels of autophagy via enhancing Bcl-2 stability. Biochem. J. 454: 447-457.
7. Jiang, Y.S., et al. 2014. Probucol suppresses human glioma cell proliferation *in vitro* via ROS production and LKB1-AMPK activation. Acta Pharmacol. Sin. 35: 1556-1565.
8. Qin, J., et al. 2015. DC120, a novel AKT inhibitor, preferentially suppresses nasopharyngeal carcinoma cancer stem-like cells by downregulating Sox-2. Oncotarget 6: 6944-6958.
9. Qian, X.L., et al. 2017. Dasatinib inhibits c-src phosphorylation and prevents the proliferation of Triple-Negative Breast Cancer (TNBC) cells which overexpress Syndecan-Binding Protein (SDCBP). PLoS ONE 12: e0171169.
10. Pollet, M., et al. 2018. The AHR represses nucleotide excision repair and apoptosis and contributes to UV-induced skin carcinogenesis. Cell Death Differ. 25: 1823-1836.

PROTOCOLS

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