SANTA CRUZ BIOTECHNOLOGY, INC.

CDK2AP1 siRNA (m): sc-60344

BACKGROUND

CDK2AP1 (also designated p12 and DOC-1) is a growth suppressor that binds to and inhibits DNA pol α/primase. When bound, CDK2AP1 affects the initiation step, but not the elongation phase, of replication. CDK2AP1 also binds to cyclin-dependent kinase 2 (Cdk2) and targets it for proteolysis. CDK2AP1 promotes cell cycle arrest by regulating the S phase of the cycle, and may trigger apoptosis. The growth factor TGFβ1 transcriptionally-induces CDK2AP1 expression, which, in turn, mediates the growth inhibitory activity of TGFβ1 by modulating Cdk2 activities and pRB phosphorylation. Due to its ability to trigger apoptosis, CDK2AP1 may be a good candidate for a tumor suppressor in oral cancer.

REFERENCES

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3. Matsuo, K., et al. 2000. $p12^{DOC-1}$, a growth suppressor, associates with DNA polymerase α/primase. FASEB J. 14: 1318-1324.
4. Hu, M.G., et al. 2004. Role of $p12^{CDK2AP1}$ in transforming growth factor-β1-mediated growth suppression. Cancer Res. 64: 490-499.
5. Sotsky Kent, T., et al. 2004. Deleted in oral cancer-1 expression upregulates proapoptosis elements in microsatellite-unstable human colorectal cancer. Ann. Surg. Oncol. 11: 192-196.
6. Buajeeb, W., et al. 2004. Interaction of the Cdk2-associated protein-1, $p12^{DOC-1/CDK2AP1}$, with its homolog, $p14^{DOC-1R}$. Biochem. Biophys. Res. Commun. 315: 998-1003.
7. Kim, Y., et al. 2005. $p12^{CDK2AP1}$ mediates DNA damage responses induced by cisplatin. Oncogene 24: 407-418.
8. Diederichs, S., et al. 2005. Expression patterns of mitotic and meiotic cell cycle cancer and development. Int. J. Cancer 116: 207-217.
9. Yuan, Z., et al. 2005. Modulation of CDK2AP1 ($p12^{DOC-1}$) expression in human colorectal cancer. Oncogene 24: 3657-3668.

CHROMOSOMAL LOCATION

Genetic locus: Cdk2ap1 (mouse) mapping to 5 F.

PRODUCT

CDK2AP1 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 CDK2AP1 shRNA Plasmid (m): sc-60344-SH and CDK2AP1 shRNA (m) Lentiviral Particles: sc-60344-V as alternate gene silencing products.

For independent verification of CDK2AP1 (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-60344A, sc-60344B and sc-60344C.

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

CDK2AP1 siRNA (m) is recommended for the inhibition of CDK2AP1 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.

GENE EXPRESSION MONITORING

CDK2AP1 (H-4): sc-390283 is recommended as a control antibody for monitoring of CDK2AP1 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 CDK2AP1 gene expression knockdown using RT-PCR Primer: CDK2AP1 (m)-PR: sc-60344-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.