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SANTA CRUZ BIOTECHNOLOGY, INC.

Pdcd-4 siRNA (m): sc-152123

BACKGROUND

The transformation suppressor gene Pdcd-4 (programmed cell death gene 4) inhibits the tumor-promoter-mediated transformation of mouse keratinocytes and is a potential tumor suppressor gene in the development of human lung cancer. Biochemical analysis suggests that the Pdcd-4 protein is involved in protein translation as well as in nuclear events. Pdcd-4 directly interacts with the RNA helicase eIF4A and inhibits protein synthesis by interfering with the assembly of the cap-dependent translation initiation complex. Pdcd-4 also suppresses the transactivation of AP-1-responsive promoters by c-Jun, suggesting that the transformation suppressor activity of Pdcd-4 might be due, at least in part, to the inhibition of c-Jun activity. In addition to affecting c-Jun phosphorylation, Pdcd-4 blocks the recruitment of the co-activator p300 by c-Jun.

REFERENCES

1. Lankat-Buttgereit, B., et al. 2003. Programmed cell death protein 4 (Pdcd-4): a novel target for antineoplastic therapy? Biol. Cell 95: 515-519.
2. Bohm, M., et al. 2003. The transformation suppressor protein Pdcd-4 shuttles between nucleus and cytoplasm and binds RNA. Oncogene 22: 4905-4910.
3. Bitomsky N., et al. 2004. Transformation suppressor protein Pdcd-4 interferes with JNK-mediated phosphorylation of c-Jun and recruitment of the coactivator p300 by c-Jun. Oncogene 23: 7484-93.
4. Lankat-Buttgereit B., et al. 2004. Pdcd-4 inhibits growth of tumor cells by suppression of carbonic anhydrase type II. Mol. Cell. Endocrinol. 214: 149-153.
5. Afonja, O., et al. 2004. Induction of PDCD4 tumor suppressor gene expression by RAR agonists, antiestrogen and HER-2/Neu antagonist in breast cancer cells. Evidence for a role in apoptosis. Oncogene 23: 8135-8145.

CHROMOSOMAL LOCATION

Genetic locus: Pdcd4 (mouse) mapping to 19 D2.

PRODUCT

Pdcd-4 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 Pdcd-4 shRNA Plasmid (m): sc-152123-SH and Pdcd-4 shRNA (m) Lentiviral Particles: sc-152123-V as alternate gene silencing products.

For independent verification of Pdcd-4 (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-152123A, sc-152123B and sc-152123C.

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.

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

Pdcd-4 siRNA (m) is recommended for the inhibition of Pdcd-4 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

Pdcd-4 (B-4): sc-376430 is recommended as a control antibody for monitoring of Pdcd-4 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 Pdcd-4 gene expression knockdown using RT-PCR Primer: Pdcd-4 (m)-PR: sc-152123-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.