SANTA CRUZ BIOTECHNOLOGY, INC.

ING4 siRNA (m): sc-60851

BACKGROUND

Inhibitor of growth protein (ING) family of nuclear proteins, also designated ING tumor suppressor proteins, inhibit tumor progression by modulating the transcriptional outputs of signaling pathways, which in turn regulates cell proliferation. Members of this family include ING1, ING2, ING3, ING4 and INGX. ING4 localizes to the nucleus and may inhibit tumor progression by adjusting the transcriptional output of signaling pathways which regulate cell proliferation. When complexed with RELA, ING4 can suppress brain tumor angiogenesis through transcriptional repression of RELA/NFκB3 target genes. ING4 interacts with HIF prolyl hydroxylase 2 (EGLN1), which represses the activity of hypoxia inducible factor (HIF).

REFERENCES

1. Shiseki, M., et al. 2003. p29ING4 and p28ING5 bind to p53 and p300, and enhance p53 activity. Cancer Res. 63: 2373-2378.
2. Zhang, X., et al. 2004. ING4 induces G_2/M cell cycle arrest and enhances the chemosensitivity to DNA-damage agents in Hep G2 cells. FEBS Lett. 570: 7-12.
3. Garkavtsev, I., et al. 2004. The candidate tumour suppressor protein ING4 regulates brain tumour growth and angiogenesis. Nature 428: 328-332.
4. Kim, S., et al. 2004. A screen for genes that suppress loss of contact inhibition of ING4 as a candidate tumor suppressor gene in human cancer. Proc. Natl. Acad. Sci. USA 101: 16251-16256.
5. Gunduz, M., et al. 2005. Frequent deletion and down-regulation of ING4, a candidate tumor suppressor gene at 12p13, in head and neck squamous cell carcinomas. Gene 356: 109-117.
6. Ozer, A., et al. 2005. Regulation of HIF by prolyl hydroxylases: recruitment of the candidate tumor suppressor protein ING4. Cell Cycle 4: 1153-1156.
7. Ozer, A., et al. 2005. The candidate tumor suppressor ING4 represses activation of the hypoxia inducible factor (HIF). Proc. Natl. Acad. Sci. USA 102: 7481-7486.
8. Zhang, X., et al. 2005. Nuclear localization signal of ING4 plays a key role in its binding to p53. Biochem. Biophys. Res. Commun. 331: 1032-1038.

CHROMOSOMAL LOCATION

Genetic locus: Ing4 (mouse) mapping to 6 F2.

PRODUCT

ING4 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 ING4 shRNA Plasmid (m): sc-60851-SH and ING4 shRNA (m) Lentiviral Particles: sc-60851-V as alternate gene silencing products.

For independent verification of ING4 (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-60851A, sc-60851B and sc-60851C.

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

ING4 siRNA (m) is recommended for the inhibition of ING4 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

ING4 (A-8): sc-376122 is recommended as a control antibody for monitoring of ING4 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 ING4 gene expression knockdown using RT-PCR Primer: ING4 (m)-PR: sc-60851-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.