SANTA CRUZ BIOTECHNOLOGY, INC.

ING1 siRNA (m): sc-36151

BACKGROUND

ING1 (inhibitor of growth protein 1) is a 422 amino acid protein encoded by the human gene ING1. ING1 belongs to the ING family and contains one PHD-type zinc finger. ING1 cooperates with p53/TP53 in the negative regulatory pathway of cell growth by modulating p53-dependent transcriptional activation. Implicated as a tumor suppressor gene, ING1 is a nuclear protein with several known isoforms, three of which are designated p47ING1 (ING1 precursor), p33ING1 and p24ING1, whose expression varies per tissue. The p33ING1 isoform is expressed in all normal tissues and cells, while the p24ING1 isoform is expressed in testis, liver, and kidney, and is weakly expressed in colon and brain, but not in breast or cultured melanocytes.

REFERENCES

1. Garkavtsev, I., et al. 1996. Suppression of the novel growth inhibitor p33ING1 promotes neoplastic transformation. Nat. Genet. 14: 415-420.
2. Zeremski, M., et al. 1997. Localization of the candidate tumor suppressor gene ING1 to human chromosome 13q34. Somat. Cell Mol. Genet. 23: 233-236.
3. Garkavtsev, I., et al. 1997. Cellular localization and chromosome mapping of a novel candidate tumor suppressor gene (ING1). Cytogenet. Cell Genet. 76: 176-178.
4. Oren, M. 1998. Tumor suppressors. Teaming up to restrain cancer. Nature 391: 233-234.
5. Garkavtsev, I., et al. 1998. The candidate tumor suppressor p33ING1 cooperates with p53 in cell growth control. Nature 391: 295-298.
6. Tachibana, M., et al. 2004. Dysfunction of p53 pathway in human colorectal cancer: analysis of p53 gene mutation and the expression of the p53-associated factors p14ARF, p33ING1, p21WAF1 and MDM2. Int. J. Oncol. 25: 913-920.
7. Goeman, F., et al. 2005. Growth inhibition by the tumor suppressor p33ING1 in immortalized and primary cells: involvement of two silencing domains and effect of Ras. Mol. Cell. Biol. 25: 422-431.
8. Gonzalez, L., et al. 2006. A functional link between the tumour suppressors ARF and p33ING1. Oncogene 25: 5173-5179.

CHROMOSOMAL LOCATION

Genetic locus: Ing1 (mouse) mapping to 8 A1.1.

PRODUCT

ING1 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 ING1 shRNA Plasmid (m): sc-36151-SH and ING1 shRNA (m) Lentiviral Particles: sc-36151-V as alternate gene silencing products.

For independent verification of ING1 (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-36151A, sc-36151B and sc-36151C.

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

ING1 siRNA (m) is recommended for the inhibition of ING1 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

ING1 (E-10): sc-373817 is recommended as a control antibody for monitoring of ING1 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 ING1 gene expression knockdown using RT-PCR Primer: ING1 (m)-PR: sc-36151-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.