SANTA CRUZ BIOTECHNOLOGY, INC.

ING3 siRNA (m): sc-62506

BACKGROUND

ING3 is a nuclear tumor-suppressor protein that has been shown to activate UV-induced apoptosis through a FAS mediated pathway. It has also exhibited the ability to regulate p53 mediated transcription and aptosis, likely by acting as an agent of the NuA4 complex histone acetyltransferase (HAT) complex. Overexpression of ING3 has also shown to increase the cleavage of apoptosis related caspases and BID, however, this is done through a pathway that does not involve increasing mitochondrial proteins. Defects of ING3 lead to a decrease of UV-induced apoptosis and such is believed to greatly affect the prognosis of melanomas and head and neck cancers.

REFERENCES

1. Gunduz, M., et al. 2002. Allelic loss and reduced expression of the ING3, a candidate tumor suppressor gene at 7q31, in human head and neck cancers. Oncogene 21: 4462-4470.
2. Nagashima, M., et al. 2003. A novel PHD-finger motif protein, p47^{ING3}, modulates p53-mediated transcription, cell cycle control, and apoptosis. Oncogene 22: 343-350.
3. Doyon, Y., et al. 2004. Structural and functional conservation of the NuA4 histone acetyltransferase complex from yeast to humans. Mol. Cell. Biol. 24: 1884-1896.
4. 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.
5. Wang, Y. and Li, G. 2006. ING3 promotes UV-induced apoptosis via FAS/caspase-8 pathway in melanoma cells. J. Biol. Chem. 281: 11887-11893.
6. Doyon, Y., et al. 2006. ING tumor suppressor proteins are critical regulators of chromatin acetylation required for genome expression and perpetuation. Mol. Cell 21: 51-64.
7. Wang, Y., et al. 2007. Prognostic significance of nuclear ING3 expression in human cutaneous melanoma. Clin. Cancer Res. 13: 4111-4116.
8. Gunduz, M., et al. 2008. Downregulation of ING3 mRNA expression predicts poor prognosis in head and neck cancer. Cancer Sci. 99: 531-538.

CHROMOSOMAL LOCATION

Genetic locus: Ing3 (mouse) mapping to 6 A3.1.

PRODUCT

ING3 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 ING3 shRNA Plasmid (m): sc-62506-SH and ING3 shRNA (m) Lentiviral Particles: sc-62506-V as alternate gene silencing products.

For independent verification of ING3 (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-62506A, sc-62506B and sc-62506C.

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

ING3 siRNA (m) is recommended for the inhibition of ING3 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

ING3 (162.1): sc-101245 is recommended as a control antibody for monitoring of ING3 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 ING3 gene expression knockdown using RT-PCR Primer: ING3 (m)-PR: sc-62506-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.