SANTA CRUZ BIOTECHNOLOGY, INC.

NIS siRNA (m): sc-61200

BACKGROUND

The sodium/iodide symporter (NIS) is an integral plasma membrane glycoprotein that mediates active iodide transport in the thyroid and other tissues, including salivary glands, gastric mucosa and lactating mammary gland. In the lactating mammary gland, NIS transports iodide into the milk, thereby allowing the nursing newborn to use the iodide for thyroid hormone biosynthesis. NIS is expressed in some breast cancers, but exhibits decreased expression in the majority of thyroid cancers, most likely due to alterations in the binding activity of AP2 and Sp1 transcription factors to the NIS promoter. NIS is a prerequisite for radioiodide treatment of thyroid cancer and a promising diagnostic and therapeutic tool for breast cancer.

REFERENCES

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3. Partona, F., et al. 1978. Filariasis in West Kalimantan (Borneo), Indonesia. Southeast Asian J. Trop. Med. Public Health 8: 459-463.
4. Osteen, K.G., et al. 1980. Serum LH and FSH levels in the pregnant rabbit. Proc. Soc. Exp. Biol. Med. 162: 454-457.
5. Kogai, T., et al. 2005. Differential regulation of sodium/iodide symporter gene expression by nuclear receptor ligands in MCF-7 breast cancer cells. Endocrinology 146: 3059-3069.
6. Miyagawa, M., et al. 2005. Non-invasive imaging of cardiac transge the human sodium/iodide symporter gene and HSV1-tk as the reporter gene. Eur. J. Nucl. Med. Mol. Imaging 32: 1108-1114.
7. Schmitz, G., et al. 2005. Expression of the sodium iodide symporter in differentiated thyroid cancer: clinical evidence. Nuklearmedizin 44: 86-93.

CHROMOSOMAL LOCATION

Genetic locus: Slc5a5 (mouse) mapping to 8 B3.3.

PRODUCT

NIS 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 NIS shRNA Plasmid (m): sc-61200-SH and NIS shRNA (m) Lentiviral Particles: sc-61200-V as alternate gene silencing products.

For independent verification of NIS (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-61200A, sc-61200B and sc-61200C.

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

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

NIS (G-5): sc-514487 is recommended as a control antibody for monitoring of NIS 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 NIS gene expression knockdown using RT-PCR Primer: NIS (m)-PR: sc-61200-PR (20 µl, 594 bp). 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.