SANTA CRUZ BIOTECHNOLOGY, INC.

NPRL2 siRNA (m): sc-62700

BACKGROUND

NPRL2, also known as TUSC4 (tumor suppressor candidate 4), is a 380 amino acid protein that contains a bipartite nuclear localization signal and a granulin protein-binding domain. It is highly expressed in skeletal muscle, followed by brain, liver and pancreas, with lower expression in lung, kidney, placenta and heart. NPRL2 is also expressed in most lung cancer cell lines and may be involved in tumor suppression. NPRL2 may play a role in mismatch repair, cell cycle checkpoint signaling and activation of apoptotic pathways. It may also enhance the therapeutic efficacy of chemotherapy drugs such as cisplatin by resensitizing patients resistant to cisplatin treatment. The gene encoding NPRL2 is conserved between species and is expressed as two isoforms due to alternative splicing events.

REFERENCES

1. Lerman, M.I., et al. 2000. The 630 kb lung cancer homozygous deletion region on human chromosome 3p21.3: identification and evaluation of the resident candidate tumor suppressor genes. The International Lung Cancer Chromosome 3p21.3 Tumor Suppressor Gene Consortium. Cancer Res. 60: 6116-6133.
2. Ji, L., et al. 2002. Expression of several genes in the human chromosome 3p21.3 homozygous deletion region by an adenovirus vector results in tumor suppressor activities *in vitro* and *in vivo*. Cancer Res. 62: 2715-2720.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607072. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Li, J., et al. 2004. Functional characterization of the candidate tumor suppressor gene NPRL2/G21 located in 3p21.3C. Cancer Res. 64: 6438-6443.
5. Yi Lo, P.H., et al. 2006. Expression of candidate chromosome 3p21.3 tumor suppressor genes and down-regulation of BLU in some esophageal squamous cell carcinomas. Cancer Lett. 234: 184-192.
6. Ueda, K., et al. 2006. The 3p21.3 tumor suppressor NPRL2 plays an important role in cisplatin-induced resistance in human non-small-cell lung cancer cells. Cancer Res. 66: 9682-9690.

CHROMOSOMAL LOCATION

Genetic locus: Nprl2 (mouse) mapping to 9 F1.

PRODUCT

NPRL2 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 NPRL2 shRNA Plasmid (m): sc-62700-SH and NPRL2 shRNA (m) Lentiviral Particles: sc-62700-V as alternate gene silencing products.

For independent verification of NPRL2 (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-62700A, sc-62700B and sc-62700C.

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

NPRL2 siRNA (m) is recommended for the inhibition of NPRL2 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

NPRL2 (F-3): sc-376986 is recommended as a control antibody for monitoring of NPRL2 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 NPRL2 gene expression knockdown using RT-PCR Primer: NPRL2 (m)-PR: sc-62700-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.