

NBL4 siRNA (m): sc-149848

BACKGROUND

NBL4, also known as Band 4.1-like protein 4A, EPB41L4A (erythrocyte membrane protein band 4.1 like 4A) or EPB41L4, is a 686 amino acid cytoskeletal protein that contains one FERM domain. While widely expressed, NBL4 is expressed at highest levels in thymus, brain, liver and peripheral blood leukocytes, with low levels found in colon, heart, testis and kidney. The gene encoding NBL4 maps to human chromosome 5, which contains 181 million base pairs and comprises nearly 6% of the human genome. Chromosome 5 is associated with Cockayne syndrome through the ERCC8 gene and familial adenomatous polyposis through the adenomatous polyposis coli (APC) tumor suppressor gene. Treacher Collins syndrome is also chromosome 5-associated and is caused by insertions or deletions within the TCOF1 gene. Deletion of the p arm of chromosome 5 leads to Cri du chat syndrome, while deletion of the q arm of chromosome 5 altogether is common in therapy-related acute myelogenous leukemias and myelodysplastic syndrome.

REFERENCES

1. Takeuchi, K., et al. 1994. Structural diversity of band 4.1 superfamily members. *J. Cell Sci.* 107: 1921-1928.
2. McDaniel, L.D., et al. 1997. Confirmation of homozygosity for a single nucleotide substitution mutation in a Cockayne syndrome patient using monoallelic mutation analysis in somatic cell hybrids. *Hum. Mutat.* 10: 317-321.
3. Crawford, M.J., et al. 1997. Human and murine PTX1/Ptx1 gene maps to the region for Treacher Collins syndrome. *Mamm. Genome* 8: 841-845.
4. Shimizu, K., et al. 2000. Molecular cloning of a novel NF2/ERM/4.1 superfamily gene, ehm2, that is expressed in high-metastatic K1735 murine melanoma cells. *Genomics* 65: 113-120.
5. Ishiguro, H., et al. 2000. Isolation and characterization of human NBL4, a gene involved in the β -catenin/tcf signaling pathway. *Jpn. J. Cancer Res.* 91: 597-603.
6. Finch, R., et al. 2005. Familial adenomatous polyposis and mental retardation caused by a *de novo* chromosomal deletion at 5q15-q22: report of a case. *Dis. Colon Rectum* 48: 2148-2152.
7. Anindya, R., et al. 2007. Damage-induced ubiquitylation of human RNA polymerase II by the ubiquitin ligase Nedd4, but not Cockayne syndrome proteins or BRCA1. *Mol. Cell* 28: 386-397.
8. Vera-Carbonell, A., et al. 2009. Characterization of a *de novo* complex chromosomal rearrangement in a patient with Cri du chat and trisomy 5p syndromes. *Am. J. Med. Genet. A* 149: 2513-2521.
9. Ravandi, F., et al. 2009. Superior outcome with hypomethylating therapy in patients with acute myeloid leukemia and high-risk myelodysplastic syndrome and chromosome 5 and 7 abnormalities. *Cancer* 115: 5746-5751.

CHROMOSOMAL LOCATION

Genetic locus: Epb4.114a (mouse) mapping to 18 B1.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

NBL4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NBL4 shRNA Plasmid (m): sc-149848-SH and NBL4 shRNA (m) Lentiviral Particles: sc-149848-V as alternate gene silencing products.

For independent verification of NBL4 (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-149848A, sc-149848B and sc-149848C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NBL4 siRNA (m) is recommended for the inhibition of NBL4 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 μ M in 66 μ l. 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NBL4 gene expression knockdown using RT-PCR Primer: NBL4 (m)-PR: sc-149848-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.