

SPATA18 siRNA (h): sc-89204

BACKGROUND

SPATA18 (spermatogenesis associated 18), also known as Mieap or SPETEX1, is a 538 amino acid protein that is thought to play a role in cell differentiation during spermatogenesis, particularly during development from late elongate spermatids to mature spermatozoa. Localizing to cytoplasm, SPATA18 is encoded by a gene that maps to human chromosome 4q12. Chromosome 4 represents approximately 6% of the human genome and contains nearly 900 genes. Notably, the Huntingtin gene, which is found to encode an expanded glutamine tract in cases of Huntington's disease, is on chromosome 4. FGFR-3 is also encoded on chromosome 4 and has been associated with thanatophoric dwarfism, achondroplasia, Muenke syndrome and bladder cancer. Chromosome 4 is also tied to Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Bonaventure, J., et al. 1996. Common mutations in the fibroblast growth factor receptor 3 (FGFR 3) gene account for achondroplasia, hypochondroplasia, and thanatophoric dwarfism. *Am. J. Med. Genet.* 63: 148-154.
2. Kalchman, M.A., et al. 1996. Huntingtin is ubiquitinated and interacts with a specific ubiquitin-conjugating enzyme. *J. Biol. Chem.* 271: 19385-19394.
3. Howard, T.D., et al. 1997. Autosomal dominant postaxial polydactyly, nail dystrophy, and dental abnormalities map to chromosome 4p16, in the region containing the Ellis-van Creveld syndrome locus. *Am. J. Hum. Genet.* 61: 1405-1412.
4. Dobson, C.M., et al. 2002. Identification of the gene responsible for the cblA complementation group of vitamin B12-responsive methylmalonic acidemia based on analysis of prokaryotic gene arrangements. *Proc. Natl. Acad. Sci. USA* 99: 15554-15559.
5. Iida, H., et al. 2004. Complementary DNA cloning of rat spetex-1, a spermatid-expressing gene-1, encoding a 63 kDa cytoplasmic protein of elongate spermatids. *Mol. Reprod. Dev.* 68: 385-393.
6. Kaindl, A.M., et al. 2005. Homozygous microdeletion of chromosome 4q11-q12 causes severe limb-girdle muscular dystrophy type 2E with joint hyperlaxity and contractures. *Hum. Mutat.* 26: 279-280.
7. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 612814. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Miyamoto, Y., et al. 2011. Possible existence of lysosome-like organella within mitochondria and its role in mitochondrial quality control. *PLoS ONE* 6: e16054.
9. Kitamura, N., et al. 2011. Mieap, a p53-inducible protein, controls mitochondrial quality by repairing or eliminating unhealthy mitochondria. *PLoS ONE* 6: e16060.

CHROMOSOMAL LOCATION

Genetic locus: SPATA18 (human) mapping to 4q12.

RESEARCH USE

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

PRODUCT

SPATA18 siRNA (h) 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 SPATA18 shRNA Plasmid (h): sc-89204-SH and SPATA18 shRNA (h) Lentiviral Particles: sc-89204-V as alternate gene silencing products.

For independent verification of SPATA18 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-89204A, sc-89204B and sc-89204C.

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

SPATA18 siRNA (h) is recommended for the inhibition of SPATA18 expression in human 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 SPATA18 gene expression knockdown using RT-PCR Primer: SPATA18 (h)-PR: sc-89204-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.