

Freud-1 siRNA (h): sc-75065

BACKGROUND

Freud-1 (five repressor element under dual repression-binding protein 1), also known as CC2D1A (coiled-coil and C2 domain-containing protein 1A) or MRT3, is a 951 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one C2 domain. Existing as three alternatively spliced isoforms, Freud-1 functions as a transcription factor that binds specifically to the five repressor element (FRE) and, via this binding, represses the transcription of SR-1A in neuronal cells. Due to its influence on SR-1A transcription, Freud-1 may be associated with the development of anxiety and major depression. Defects in the gene encoding Freud-1 are the cause of non-syndromic mental retardation autosomal recessive type 3 (MRT3), which is characterized by severe mental retardation and psychomotor development delay in early childhood.

REFERENCES

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2. Raymond, F.L. and Tarpey, P. 2006. The genetics of mental retardation. *Hum. Mol. Genet.* 2: R110-R116.
3. Basel-Vanagaite, L., et al. 2006. The CC2D1A, a member of a new gene family with C2 domains, is involved in autosomal recessive non-syndromic mental retardation. *J. Med. Genet.* 43: 203-210.
4. Basel-Vanagaite, L., et al. 2007. Genetic screening for autosomal recessive nonsyndromic mental retardation in an isolated population in Israel. *Eur. J. Hum. Genet.* 15: 250-253.
5. Rogava, A. and Albert, P.R. 2007. The mental retardation gene CC2D1A/Freud-1 encodes a long isoform that binds conserved DNA elements to repress gene transcription. *Eur. J. Neurosci.* 26: 965-974.
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CHROMOSOMAL LOCATION

Genetic locus: CC2D1A (human) mapping to 19p13.12.

PRODUCT

Freud-1 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 Freud-1 shRNA Plasmid (h): sc-75065-SH and Freud-1 shRNA (h) Lentiviral Particles: sc-75065-V as alternate gene silencing products.

For independent verification of Freud-1 (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-75065A, sc-75065B and sc-75065C.

RESEARCH USE

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

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

Freud-1 siRNA (h) is recommended for the inhibition of Freud-1 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 Freud-1 gene expression knockdown using RT-PCR Primer: Freud-1 (h)-PR: sc-75065-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.