SANTA CRUZ BIOTECHNOLOGY, INC.

RAI1 siRNA (h): sc-61438

BACKGROUND

Retinoic acid induced 1 (RAI1) is a 1,906 amino acid protein containing an N-terminal polyglutamine stretch that is expressed in most tissues, with highest expression in neuronal tissues. RAI1 functions as a transcriptional regulator and is important for embryonic and postnatal developments. Heterozygous deletions of the RAI1 gene are associated with Smith-Magenis syndrome (SMS), a mental retardation syndrome with behavioral, neurological and skeletal anomalies. Individuals affected with SMS usually display self-injurious behaviors, sleep disturbance, developmental delay and reduced motor and cognitive skills. RAI1 haploinsufficiency is specifically responsible for the obesity and craniofacial symptoms of SMS. RAI1 mutations have also been implicated in schizophrenia and spinocerebellar ataxia type 2.

REFERENCES

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2. Hayes, S., et al. 2000. CAG repeat length in RAI1 is associated with age at onset variability in spinocerebellar ataxia type 2 (SCA2). Hum. Mol. Genet. 9: 1753-1758.
3. Slager, R.E., et al. 2003. Mutations in RAI1 associated with Smith-Magenis syndrome. Nat. Genet. 33: 466-468.
4. Toulouse, A., et al. 2003. Molecular cloning and characterization of human RAI1, a gene associated with schizophrenia. Genomics 82: 162-171.
5. Bi, W., et al. 2004. Mutations of RAI1, a PHD-containing protein, in nondeletion patients with Smith-Magenis syndrome. Hum. Genet. 115: 515-524.
6. Bi, W., et al. 2005. Inactivation of RAI1 in mice recapitulates phenotypes observed in chromosome engineered mouse models for Smith-Magenis syndrome. Hum. Mol. Genet. 14: 983-995.
7. Girirajan, S., et al. 2005. RAI1 variations in Smith-Magenis syndrome patients without 17p11.2 deletions. J. Med. Genet. 42: 820-828.
8. Vlangos, C.N., et al. 2005. Diagnostic FISH probes for del(17)(p11.2p11.2) associated with Smith-Magenis syndrome should contain the RAI1 gene. Am. J. Med. Genet. A 132A: 278-282.

CHROMOSOMAL LOCATION

Genetic locus: RAI1 (human) mapping to 17p11.2.

PRODUCT

RAI1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RAI1 shRNA Plasmid (h): sc-61438-SH and RAI1 shRNA (h) Lentiviral Particles: sc-61438-V as alternate gene silencing products.

For independent verification of RAI1 (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-61438A, sc-61438B and sc-61438C.

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

RAI1 siRNA (h) is recommended for the inhibition of RAI1 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 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

RAI1 (D-11): sc-365065 is recommended as a control antibody for monitoring of RAI1 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 RAI1 gene expression knockdown using RT-PCR Primer: RAI1 (h)-PR: sc-61438-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.