SANTA CRUZ BIOTECHNOLOGY, INC.

RAI2 siRNA (m) : sc-76343

BACKGROUND

Retinoic acid (RA) represents the oxidized form of vitamin A and, via interactions with retinoic acid receptors (RARs), plays a crucial role in development, cellular growth and differentiation. RAI2 (retinoic acid induced 2) is a 530 amino acid protein that may be related to RA function and is thought to play a role in developmental processes throughout the cell. The gene encoding RAI2 localizes to a region on human chromosome X that is associated with Nance-Horan syndrome, sensorineural deafness, non-specific X-linked mental retardation, oral-facial-digital syndrome and Fried syndrome, suggesting a possible role for RAI2 in the pathogenesis of these diseases. Chromosome X, one of the two human sex chromosomes, contains nearly 153 million base pairs and encodes over 1,000 genes. In conjunction with chromosome Y, chromosome X is responsible for sex determination, as an X and a Y chromosome lead to normal male development, while two copies of an X chromosome lead to normal female development.

REFERENCES

1. Walpole, S.M., et al. 1999. Identification and characterization of the human homologue (RAI2) of a mouse retinoic acid-induced gene in Xp22. Genomics 55: 275-283.
2. Walpole, S.M., et al. 1999. Exclusion of RAI2 as the causative gene for Nance-Horan syndrome. Hum. Genet. 104: 410-411.
3. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 300217. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Bernardino-Sgherri, J., et al. 2002. Overall DNA methylation and chromatin structure of normal and abnormal X chromosomes. Cytogenet. Genome Res. 99: 85-91.
5. Hayashi, T., et al. 2006. Novel form of a single X-linked visual pigment gene in a unique dichromatic color-vision defect. Vis. Neurosci. 23: 411-417.

CHROMOSOMAL LOCATION

Genetic locus: Rai2 (mouse) mapping to X F4.

PRODUCT

RAI2 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 RAI2 shRNA Plasmid (m): sc-76343-SH and RAI2 shRNA (m) Lentiviral Particles: sc-76343-V as alternate gene silencing products.

For independent verification of RAI2 (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-76343A, sc-76343B and sc-76343C.

PROTOCOLS

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

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

RAI2 siRNA (m) is recommended for the inhibition of RAI2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RAI2 gene expression knockdown using RT-PCR Primer: RAI2 (m) -PR: sc-76343-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.