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CECR2 siRNA (m): sc-142258

BACKGROUND

Adenosine deaminase is an enzyme that is present in most tissues and exists predominantly as a monomer, although in some tissues it is associated with adenosine deaminase-binding protein. Adenosine deaminase degrades extracellular adenosine, which is toxic for lymphocytes. A novel family of growth factors that share sequence similarity to adenosine deaminase has been identified. The cat eye syndrome critical region protein (CECR) family includes CECR1, CECR2, CECR3, CECR4, CECR5, CECR6, CECR7, CECR8 and CECR9. The genes encoding CECR proteins are candidates for Cat Eye Syndrome (CES), a developmental disorder associated with the duplication of a 2 Mb region of 22q11.2. CES is characterized by the combination of coloboma of the iris and anal atresia with fistula, downslanting palpebral fissures, preauricular tags and/or pits, frequent occurrence of heart and renal malformations, and normal or near-normal mental development. CECR family members are widely expressed. Specifically, CECR1 has the highest expression in adult heart, lung, lymphoblasts and placenta. CECR2 is also involved in neurulation and chromatin remodeling. Mutations in the CECR2 gene result in neural tube defects.

REFERENCES

1. Daddona, P.E., et al. 1980. Analysis of normal and mutant forms of human adenosine deaminase—a review. *Mol. Cell. Biochem.* 29: 91-101.
2. Franco, R., et al. 1998. Enzymatic and extraenzymatic role of ectoadenosine deaminase in lymphocytes. *Immunol. Rev.* 161: 27-42.
3. Riazi, M.A., et al. 2000. The human homolog of insect-derived growth factor, CECR1, is a candidate gene for features of cat eye syndrome. *Genomics* 64: 277-285.
4. Maier, S.A., et al. 2001. Characterization of the adenosine deaminase-related growth factor (ADGF) gene family in *Drosophila*. *Gene* 280: 27-36.
5. Footz, T.K., et al. 2001. Analysis of the cat eye syndrome critical region in humans and the region of conserved synteny in mice: a search for candidate genes at or near the human chromosome 22 pericentromere. *Genome Res.* 11: 1053-1070.
6. Banting, G.S., et al. 2005. CECR2, a protein involved in neurulation, forms a novel chromatin remodeling complex with SNF2L. *Hum. Mol. Genet.* 14: 513-524.
7. Riazi, A.M., et al. 2005. Transgenic expression of CECR1 adenosine deaminase in mice results in abnormal development of heart and kidney. *Transgenic Res.* 14: 333-336.

CHROMOSOMAL LOCATION

Genetic locus: *Cecr2* (mouse) mapping to 6 F1.

PRODUCT

CECR2 siRNA (m) is a target-specific 19-25 nt siRNA 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 CECR2 shRNA Plasmid (m): sc-142258-SH and CECR2 shRNA (m) Lentiviral Particles: sc-142258-V as alternate gene silencing 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 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

CECR2 siRNA (m) is recommended for the inhibition of CECR2 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.

GENE EXPRESSION MONITORING

CECR2 (C-3): sc-514878 is recommended as a control antibody for monitoring of CECR2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 CECR2 gene expression knockdown using RT-PCR Primer: CECR2 (m)-PR: sc-142258-PR (20 μ l). 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.