

ZNF513 siRNA (m): sc-155735

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. The majority of zinc-finger proteins contain a Krüppel-type DNA binding domain and a KRAB domain, which is thought to interact with KAP1, thereby recruiting histone modifying proteins. ZNF513 (zinc finger protein 513), also known as RP58 or HMFT0656, is a 541 amino acid nuclear protein that is expressed in retina and belongs to the Krüppel C₂H₂-type zinc-finger protein family. Containing eight C₂H₂-type zinc fingers, ZNF513 is thought to be a transcriptional regulator that is involved in retinal development and maintenance. Defects in ZNF513 are suggested to be the cause of retinitis pigmentosa type 58 (RP58), which is characterized retinal pigment deposits that are visible upon fundus examination, and primary loss of rod photoreceptor cells followed by secondary loss of cone photoreceptors. Night vision blindness and loss of midperipheral visual field are typical in people with RP58. ZNF513 exists as three alternatively spliced isoforms.

REFERENCES

1. de Leeuw, R.J., et al. 2004. Comprehensive whole genome array CGH profiling of mantle cell lymphoma model genomes. *Hum. Mol. Genet.* 13: 1827-1837.
2. Edelstein, L.C. and Collins, T. 2005. The SCAN domain family of zinc finger transcription factors. *Gene* 359: 1-17.
3. Nusbaum, C., et al. 2006. DNA sequence and analysis of human chromosome 8. *Nature* 439: 331-335.
4. Kimura, K., et al. 2006. Diversification of transcriptional modulation: large-scale identification and characterization of putative alternative promoters of human genes. *Genome Res.* 16: 55-65.
5. Zhong, Z., et al. 2007. Identification of a novel human zinc finger gene, ZNF438, with transcription inhibition activity. *J. Biochem. Mol. Biol.* 40: 517-524.
6. O'Geen, H., et al. 2007. Genome-wide analysis of KAP1 binding suggests autoregulation of KRAB-ZNFs. *PLoS Genet.* 3: e89.
7. Li, L., et al. 2010. A mutation in ZNF513, a putative regulator of photoreceptor development, causes autosomal-recessive retinitis pigmentosa. *Am. J. Hum. Genet.* 87: 400-409.

CHROMOSOMAL LOCATION

Genetic locus: Zfp513 (mouse) mapping to 5 B1.

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.

PRODUCT

ZNF513 siRNA (m) is a pool of 2 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 ZNF513 shRNA Plasmid (m): sc-155735-SH and ZNF513 shRNA (m) Lentiviral Particles: sc-155735-V as alternate gene silencing products.

For independent verification of ZNF513 (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-155735A and sc-155735B.

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

ZNF513 siRNA (m) is recommended for the inhibition of ZNF513 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ZNF513 gene expression knockdown using RT-PCR Primer: ZNF513 (m)-PR: sc-155735-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.