

# ZNF138 siRNA (h): sc-89608

## 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. ZNF138 (zinc finger protein 138) is a 262 amino acid nuclear protein that is implicated in transcriptional regulation. A member of the Krüppel C<sub>2</sub>H<sub>2</sub>-type zinc-finger protein family, ZNF138 contains six C<sub>2</sub>H<sub>2</sub>-type zinc fingers. The gene encoding ZNF138 maps to human chromosome 7, which houses over 1,000 genes, comprises nearly 5% of the human genome and has been linked to osteogenesis imperfecta, Pendred syndrome and lissencephaly.

## REFERENCES

1. Tsiouras, P., Myers, J.C., Ramirez, F. and Prockop, D.J. 1983. Restriction fragment length polymorphism associated with the pro  $\alpha$  2(I) gene of human type I procollagen. Application to a family with an autosomal dominant form of osteogenesis imperfecta. *J. Clin. Invest.* 72: 1262-1267.
2. Bray, P., Lichter, P., Thiesen, H.J., Ward, D.C. and Dawid, I.B. 1991. Characterization and mapping of human genes encoding zinc finger proteins. *Proc. Natl. Acad. Sci. USA* 88: 9563-9567.
3. Lichter, P., Bray, P., Ried, T., Dawid, I.B. and Ward, D.C. 1992. Clustering of C<sub>2</sub>H<sub>2</sub> zinc finger motif sequences within telomeric and fragile site regions of human chromosomes. *Genomics* 13: 999-1007.
4. Iwasaki, S., Usami, S., Abe, S., Isoda, H., Watanabe, T. and Hoshino, T. 2001. Long-term audiological feature in Pendred syndrome caused by PDS mutation. *Arch. Otolaryngol. Head Neck Surg.* 127: 705-708.
5. Huntley, S., Baggott, D.M., Hamilton, A.T., Tran-Gyamfi, M., Yang, S., Kim, J., Gordon, L., Branscomb, E. and Stubbs, L. 2006. A comprehensive catalog of human KRAB-associated zinc finger genes: insights into the evolutionary history of a large family of transcriptional repressors. *Genome Res.* 16: 669-677.
6. Filion, G.J., Zhenilo, S., Salozhin, S., Yamada, D., Prokhortchouk, E. and Defossez, P.A. 2006. A family of human zinc finger proteins that bind methylated DNA and repress transcription. *Mol. Cell. Biol.* 26: 169-181.
7. Reiner, O., Sapoznik, S. and Sapir, T. 2006. Lissencephaly 1 linking to multiple diseases: mental retardation, neurodegeneration, schizophrenia, male sterility, and more. *Neuromolecular Med.* 8: 547-565.
8. Tian, C.Y., Zhang, L.Q. and He, F.C. 2006. Progress in the study of KRAB zinc finger protein. *Yi Chuan* 28: 1451-1456.

## CHROMOSOMAL LOCATION

Genetic locus: ZNF138 (human) mapping to 7q11.21.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

ZNF138 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZNF138 shRNA Plasmid (h): sc-89608-SH and ZNF138 shRNA (h) Lentiviral Particles: sc-89608-V as alternate gene silencing products.

For independent verification of ZNF138 (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-89608A, sc-89608B and sc-89608C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

ZNF138 siRNA (h) is recommended for the inhibition of ZNF138 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  $\mu$ M in 66  $\mu$ 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 ZNF138 gene expression knockdown using RT-PCR Primer: ZNF138 (h)-PR: sc-89608-PR (20  $\mu$ 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.