

# ZEB1 siRNA (r): sc-156138

## BACKGROUND

ZEB1 (also designated Zfhep, for zinc finger homeodomain enhancer-binding protein,  $\delta$ EF1, AREB6, BZP and NIL-2A) is a non-receptor transcription factor analogous to the *Drosophila* ZFH-1 protein. ZEB1 contains two separate zinc finger domains (ZD1 and ZD2), which are essential for DNA binding and repression, and a homeodomain (HD), which is not. ZEB1 also contains three repression domains, two of which flank ZD1, and a third located between HD and ZD2. ZEB1 represses transcription by site competition and enhancer silencing mechanisms, as well as by interacting with corepressors through its repression domains. Interaction of ZEB1 with the TSH $\beta$  gene T3-response element may play a role in the modification of gene-specific regulation by thyroid hormones. In the embryo, ZEB1 is primarily expressed in the mesoderm, but changes in the level of expression during tissue maturation suggest a role for ZEB1 in the early histogenesis of mesodermal tissues. In addition to its role as an embryonic gene regulator, ZEB1 is also involved in regulating the development of certain skeletal structures.

## REFERENCES

1. Funahashi, J., et al. 1993.  $\delta$ -crystallin enhancer binding protein  $\delta$ EF1 is a zinc finger homeodomain protein implicated in postgastrulation embryogenesis. *Development* 119: 433-446.
2. Franklin, A., et al. 1994. BZP, a novel serum-responsive zinc finger protein that inhibits gene transcription. *Mol. Cell. Biol.* 14: 6773-6788.
3. Sekido, R., et al. 1997. Two mechanisms in the action of repressor  $\delta$ EF1: binding site competition with an activator and active repression. *Genes Cells* 2: 771-783.
4. Darling, D.S., et al. 1998. A zinc finger homeodomain transcription factor binds specific thyroid hormone response elements. *Mol. Cell. Endocrinol.* 139: 25-35.
5. Takagi, T., et al. 1998.  $\delta$ EF1, a zinc finger and homeodomain transcription factor, is required for skeleton patterning in multiple lineages. *Development* 125: 21-31.

## CHROMOSOMAL LOCATION

Genetic locus: Zeb1 (rat) mapping to 17q12.1.

## PRODUCT

ZEB1 siRNA (r) 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 ZEB1 shRNA Plasmid (r): sc-156138-SH and ZEB1 shRNA (r) Lentiviral Particles: sc-156138-V as alternate gene silencing products.

For independent verification of ZEB1 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-156138A, sc-156138B and sc-156138C.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ 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

ZEB1 siRNA (r) is recommended for the inhibition of ZEB1 expression in rat 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 ZEB1 gene expression knockdown using RT-PCR Primer: ZEB1 (r)-PR: sc-156138-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.