

# Dia 1 siRNA (h): sc-35190

## BACKGROUND

Dia 1, also known as DIAPH1 (diaphanous homolog 1) or DRF1, a mammalian homolog of the *Drosophila* diaphanous gene, belongs to a family of formin homology (FH) proteins which are characterized by having tandemly aligned FH1 (formin homology 1) and FH2 (formin homology 2) domains in their carboxy terminal regions. Dia 1 contains a DAD (diaphanous autoregulatory) domain, which is involved in the elongation of Actin filaments, and a GBD/FH3 (Rho GTPase-binding/formin homology 3) domain, which interacts with the DAD domain via autoinhibitory interactions to regulate the activation of Dia 1. Dia 1 is required for the assembly of F-Actin structures, and regulates the polymerization and depolymerization of Actin filaments. Localizing to the cell membrane, Dia 1 is expressed in a wide range of tissues, including brain, heart, lung and kidney. Defects to the gene encoding Dia 1 have been linked to deafness autosomal dominant type 1 (DFNA1), a disorder characterized by sensorineural hearing loss.

## CHROMOSOMAL LOCATION

Genetic locus: DIAPH1 (human) mapping to 5q31.3.

## PRODUCT

Dia 1 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 Dia 1 shRNA Plasmid (h): sc-35190-SH and Dia 1 shRNA (h) Lentiviral Particles: sc-35190-V as alternate gene silencing products.

For independent verification of Dia 1 (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-35190A, sc-35190B and sc-35190C.

## 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

Dia 1 siRNA (h) is recommended for the inhibition of Dia 1 expression in human cells.

## PROTOCOLS

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

## 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.

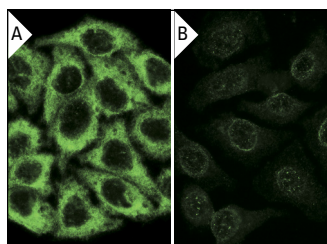
## GENE EXPRESSION MONITORING

Dia 1 (E-4): sc-373807 is recommended as a control antibody for monitoring of Dia 1 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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Dia 1 gene expression knockdown using RT-PCR Primer: Dia 1 (h)-PR: sc-35190-PR (20  $\mu$ l, 374 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## DATA



Dia 1 siRNA (h): sc-35190. Immunofluorescence staining of methanol-fixed, control HeLa (A) and Dia 1 siRNA silenced HeLa (B) cells showing diminished cytoplasmic staining in the siRNA silenced cells. Cells probed with Dia 1 (C-20): sc-10885.

## SELECT PRODUCT CITATIONS

1. Zhou, X., et al. 2018. Mdia1 is crucial for advanced glycation end product-induced endothelial hyperpermeability. *Cell. Physiol. Biochem.* 45: 1717-1730.
2. Higa, N., et al. 2019. Formin-like 1 (FMNL1) is associated with glioblastoma multiforme mesenchymal subtype and independently predicts poor prognosis. *Int. J. Mol. Sci.* 20: 6355.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.