

# DACH1 siRNA (m): sc-77090

## BACKGROUND

DACH1 (Dachshund homolog 1), also known as DACH, is a 758 amino acid homolog of the *Drosophila* dachshund gene that encodes a nuclear factor involved in eye, leg and nervous system development. Localized to the nucleus and expressed throughout the body, DACH1 is a transcription factor that regulates the activation of a variety of genes involved in organogenesis and is crucial in proper eye formation. Through association with Smad4 and NCOR1, DACH1 is able to inhibit the TGF $\beta$  signaling pathway and, via its DACHbox-N domain, can bind directly to chromatin where it regulates transcription. Additionally, DACH1 can block cellular proliferation and growth of human breast cancer cells, suggesting a possible role in tumor suppression. Four isoforms of DACH1 exist due to alternative splicing events.

## REFERENCES

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2. Heanue, T.A., Davis, R.J., Rowitch, D.H., Kispert, A., McMahon, A.P., Mardon, G. and Tabin, C.J. 2002. DACH1, a vertebrate homologue of *Drosophila* dachshund, is expressed in the developing eye and ear of both chick and mouse and is regulated independently of Pax and Eya genes. *Mech. Dev.* 111: 75-87.
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## CHROMOSOMAL LOCATION

Genetic locus: Dach1 (mouse) mapping to 14 E2.1.

## PRODUCT

DACH1 siRNA (m) 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.

For independent verification of DACH1 (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-77090A, sc-77090B and sc-77090C.

## 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

DACH1 siRNA (m) is recommended for the inhibition of DACH1 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  $\mu$ 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

DACH1 (A-6): sc-398706 is recommended as a control antibody for monitoring of DACH1 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DACH1 gene expression knockdown using RT-PCR Primer: DACH1 (m)-PR: sc-77090-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.

## PROTOCOLS

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