SANTA CRUZ BIOTECHNOLOGY, INC.

DACH1 (H-93): sc-98563

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 TGFβ 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

1. Ayres, J.A., et al. 2001. DACH: genomic characterization, evaluation as a candidate for postaxial polydactyly type A2, and developmental expression pattern of the mouse homologue. Genomics 77: 18-26.
2. Heanue, T.A., et al. 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.
3. Wu, K., et al. 2003. DACH1 inhibits transforming growth factor β signaling through binding Smad4. J. Biol. Chem. 278: 51673-51684.
4. Sunde, J.S., et al. 2006. Expression profiling identifies altered expression of genes that contribute to the inhibition of transforming growth factor β signaling in ovarian cancer. Cancer Res. 66: 8404-8412.
5. Wu, K., et al. 2006. DACH1 is a cell fate determination factor that inhibits cyclin D1 and breast tumor growth. Mol. Cell. Biol. 26: 7116-7129.
6. Sundaram, K., et al. 2007. DACH1 negatively regulates the human RANK ligand gene expression in stromal/preosteoblast cells. J. Cell. Biochem. 103: 1747-1759.

CHROMOSOMAL LOCATION

Genetic locus: DACH1 (human) mapping to 13q21.33; Dach1 (mouse) mapping to 14 E2.1.

SOURCE

DACH1 (H-93) is a rabbit polyclonal antibody raised against amino acids 528-620 mapping within an internal region of DACH1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-98563 X, 200 µg/0.1 ml.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

DACH1 (H-93) is recommended for detection of DACH1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

DACH1 (H-93) is also recommended for detection of DACH1 in additional species, including equine, canine, bovine, porcine and avian.

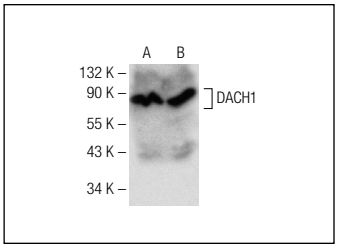
Suitable for use as control antibody for DACH1 siRNA (h): sc-77089, DACH1 siRNA (m): sc-77090, DACH1 shRNA Plasmid (h): sc-77089-SH, DACH1 shRNA Plasmid (m): sc-77090-SH, DACH1 shRNA (h) Lentiviral Particles: sc-77089-V and DACH1 shRNA (m) Lentiviral Particles: sc-77090-V.

DACH1 (H-93) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

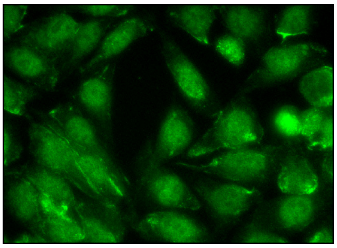
Molecular Weight of DACH1: 79 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

DATA



DACH1 (H-93): sc-98563. Western blot analysis of DACH1 expression in HeLa (**A**) and Jurkat (**B**) whole cell lysates.



DACH1 (H-93): sc-98563. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear and cytoplasmic localization. Kindly provided by Yang Xiang, Ph.D., Division of Newborn Medicine, Boston Children's Hospital, Cell Biology Department, Harvard Medical School.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.