

DACH2 (C-19): sc-74392

BACKGROUND

DACH2 (dachshund homolog 2) is one of two mammalian homologues of the *Drosophila* dachshund, a transcription factor involved in cell fate determination in the eye, limb and genital disc of the fly. DACH2 is a 599 amino acid protein that contains two characteristic dachshund domains: an N-terminal domain responsible for DNA binding and a C-terminal domain responsible for protein-protein interactions. Localized to the nucleus, DACH2 functions as a transcription factor that is involved in the regulation of organogenesis. DACH2 interacts with Six1 and EYA2 to regulate myogenesis, and is also involved in the corepression of Six6 by directly repressing cyclin-dependent kinase inhibitors. Three named isoforms of DACH2 exist as a result of alternative splicing events.

REFERENCES

1. Heanue, T.A., Reshef, R., Davis, R.J., Mardon, G., Oliver, G., Tomarev, S., Lassar, A.B. and Tabin, C.J. 1999. Synergistic regulation of vertebrate muscle development by DACH2, EYA2, and Six1, homologs of genes required for *Drosophila* eye formation. *Genes Dev.* 13: 3231-3243.
2. Mennerich, D. and Braun, T. 2001. Activation of myogenesis by the homeobox gene Lbx1 requires cell proliferation. *EMBO J.* 20: 7174-7183.
3. Davis, R.J., Shen, W., Sandler, Y.I., Heanue, T.A. and Mardon, G. 2001. Characterization of mouse DACH2, a homologue of *Drosophila* dachshund. *Mech. Dev.* 102: 169-179.
4. Backman, M., Machon, O., Van Den Bout, C.J. and Krauss, S. 2003. Targeted disruption of mouse DACH1 results in postnatal lethality. *Dev. Dyn.* 226: 139-144.
5. Wu, K., Yang, Y., Wang, C., Davoli, M.A., D'Amico, M., Li, A., Cveklova, K., Kozmik, Z., Lisanti, M.P., Russell, R.G., Cvekl, A. and Pestell, R.G. 2003. DACH1 inhibits transforming growth factor- β signaling through binding Smad4. *J. Biol. Chem.* 278: 51673-51684.
6. Ozaki, H., Nakamura, K., Funahashi, J., Ikeda, K., Yamada, G., Tokano, H., Okamura, H.O., Kitamura, K., Muto, S., Kotaki, H., Sudo, K., Horai, R., Iwakura, Y. and Kawakami, K. 2004. Six1 controls patterning of the mouse otic vesicle. *Development* 131: 551-562.
7. Davis, R.J., Pesah, Y.I., Harding, M., Paylor, R. and Mardon, G. 2006. Mouse DACH2 mutants do not exhibit gross defects in eye development or brain function. *Genesis* 44: 84-92.
8. Tang, H. and Goldman, D. 2006. Activity-dependent gene regulation in skeletal muscle is mediated by a histone deacetylase (HDAC)-DACH2-myogenin signal transduction cascade. *Proc. Natl. Acad. Sci. USA* 103: 16977-16982.

CHROMOSOMAL LOCATION

Genetic locus: DACH2 (human) mapping to Xq21.2; Dach2 (mouse) mapping to X E1.

SOURCE

DACH2 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of DACH2 of human origin.

PRODUCT

Each vial contains 200 μ g 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-74392 X, 200 μ g/0.1 ml.

Blocking peptide available for competition studies, sc-74392 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DACH2 (C-19) is recommended for detection of DACH2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

DACH2 (C-19) is also recommended for detection of DACH2 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for DACH2 siRNA (h): sc-77091, DACH2 siRNA (m): sc-77092, DACH2 shRNA Plasmid (h): sc-77091-SH, DACH2 shRNA Plasmid (m): sc-77092-SH, DACH2 shRNA (h) Lentiviral Particles: sc-77091-V and DACH2 shRNA (m) Lentiviral Particles: sc-77092-V.

DACH2 (C-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of DACH2: 65 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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



Try **DACH2 (A-5): sc-515091**, our highly recommended monoclonal alternative to DACH2 (C-19).