SANTA CRUZ BIOTECHNOLOGY, INC.

GRHL3 (C-12): sc-398838

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The Power to Question

BACKGROUND

The grainyhead subfamily, whose members include GRHL1, GRHL2 and GRHL3, consist of orthologs of the *Drosophila* grainyhead (grh) gene. In *Drosophila,* grh is involved in early dorsal/ventral patterning and tissue development. The grainyhead subfamily members are, therefore, believed to act as transcription factors during development. GRHL1, GRHL2 and GRHL3 are localized to the nucleus and exist as homodimers or as heterodimers with each other. GRHL3, also known as sister of mammalian grainyhead (SOM) or transcription factor CP2-like 4 (TFCP2L4), is a 626 amino acid protein. Transgenic GRHL3-null mouse embryos have displayed many neural tube defects, indicating a significant role of GRHL3 in neural tube formation during development. GRHL3 is widely expressed and exists as four isoforms produced by alternative splicing. Isoform 2 has been shown to be prostate specific.

REFERENCES

1. Estibeiro, J.P., et al. 1993. Interaction between splotch (Sp) and curly tail (ct) mouse mutants in the embryonic development of neural tube defects. Development 119: 113-121.
2. Neumann, P.E., et al. 1994. Multifactorial inheritance of neural tube defects: localization of the major gene and recognition of modifiers in ct mutant mice. Nat. Genet. 6: 357-362.

CHROMOSOMAL LOCATION

Genetic locus: GRHL3 (human) mapping to 1p36.11; Grhl3 (mouse) mapping to 4 D3.

SOURCE

GRHL3 (C-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 435-459 within an internal region of GRHL3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GRHL3 (C-12) is available conjugated to agarose (sc-398838 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398838 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398838 PE), fluorescein (sc-398838 FITC), Alexa Fluor® 488 (sc-398838 AF488), Alexa Fluor® 546 (sc-398838 AF546), Alexa Fluor® 594 (sc-398838 AF594) or Alexa Fluor® 647 (sc-398838 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398838 AF680) or Alexa Fluor® 790 (sc-398838 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398838 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

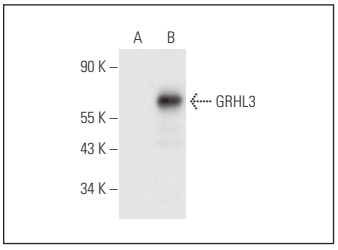
GRHL3 (C-12) is recommended for detection of GRHL3 isoforms 1-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GRHL3 siRNA (h): sc-78890, GRHL3 siRNA (m): sc-145762, GRHL3 shRNA Plasmid (h): sc-78890-SH, GRHL3 shRNA Plasmid (m): sc-145762-SH, GRHL3 shRNA (h) Lentiviral Particles: sc-78890-V and GRHL3 shRNA (m) Lentiviral Particles: sc-145762-V.

Molecular Weight of GRHL3: 70 kDa.

Positive Controls: GRHL3 (h): 293T Lysate: sc-115727.

DATA



GRHL3 (C-12): sc-398838. Western blot analysis of GRHL3 expression in non-transfected: sc-117752 (**A**) and human GRHL3 transfected: sc-115727 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Di Girolamo, D., et al. 2016. Reciprocal interplay between thyroid hormone and microRNA-21 regulates hedgehog pathway-driven skin tumorigenesis. J. Clin. Invest. 126: 2308-2320.
2. Egolf, S., et al. 2019. LSD1 inhibition promotes epithelial differentiation through derepression of fate-determining transcription factors. Cell Rep. 28: 1981-1992.e7.
3. Li, H., et al. 2019. The molecular anatomy of mammalian upper lip and primary palate fusion at single cell resolution. Development 146: dev174888.
4. Tan, L., et al. 2021. GRHL3 promotes tumor growth and metastasis via the MEK pathway in colorectal cancer. Anal. Cell. Pathol. 2021: 6004821.
5. Kimura-Yoshida, C., et al. 2022. USP39 is essential for mammalian epithelial morphogenesis through upregulation of planar cell polarity components. Commun. Biol. 5: 378.
6. Reese, R.M., et al. 2022. GRHL2 enhances phosphorylated estrogen receptor (ER) chromatin binding and regulates ER-mediated transcriptional activation and repression. Mol. Cell. Biol. 42: e0019122.

RESEARCH USE

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