

# GRHL1 (D-2): sc-515541

## BACKGROUND

The grainyhead subfamily, whose members include GRHL1, GRHL2 and GRHL3, consist of orthologs of the *Drosophila* grainyhead (GRH) protein. 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. GRHL1 (grainyhead-like 1 (*Drosophila*)), also known as MGR, LBP32, NH32 or TFCP2L2, is a 618 amino acid nuclear protein that is highly expressed in kidney, brain, tonsil, liver, placenta and pancreas. Like other members of the grainyhead family, GRHL1, which exists as three alternatively spliced isoforms, is thought to function as a transcription factor. GRHL1 is known to bind and transactivate the EN-1 promoter and may play a role in epidermal differentiation.

## REFERENCES

- Huang, N. and Miller, W.L. 2000. Cloning of factors related to HIV-inducible LBP proteins that regulate steroidogenic factor-1-independent human placental transcription of the cholesterol side-chain cleavage enzyme, P450scc. *J. Biol. Chem.* 275: 2852-2858.
- Peters, L.M., et al. 2002. Mutation of a transcription factor, TFCP2L3, causes progressive autosomal dominant hearing loss, DFNA28. *Hum. Mol. Genet.* 11: 2877-2885.
- Wilanowski, T., et al. 2002. A highly conserved novel family of mammalian developmental transcription factors related to *Drosophila* grainyhead. *Mech. Dev.* 114: 37-50.
- Ting, S.B., et al. 2003. The identification and characterization of human sister-of-mammalian grainyhead (SOM) expands the grainyhead-like family of developmental transcription factors. *Biochem. J.* 370: 953-962.

## CHROMOSOMAL LOCATION

Genetic locus: GRHL1 (human) mapping to 2p25.1; Grhl1 (mouse) mapping to 12 A1.3.

## SOURCE

GRHL1 (D-2) is a mouse monoclonal antibody raised against amino acids 117-180 mapping within an internal region of GRHL1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GRHL1 (D-2) is available conjugated to agarose (sc-515541 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515541 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515541 PE), fluorescein (sc-515541 FITC), Alexa Fluor® 488 (sc-515541 AF488), Alexa Fluor® 546 (sc-515541 AF546), Alexa Fluor® 594 (sc-515541 AF594) or Alexa Fluor® 647 (sc-515541 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515541 AF680) or Alexa Fluor® 790 (sc-515541 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

GRHL1 (D-2) is recommended for detection of GRHL1 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 GRHL1 siRNA (h): sc-95046, GRHL1 siRNA (m): sc-145760, GRHL1 shRNA Plasmid (h): sc-95046-SH, GRHL1 shRNA Plasmid (m): sc-145760-SH, GRHL1 shRNA (h) Lentiviral Particles: sc-95046-V and GRHL1 shRNA (m) Lentiviral Particles: sc-145760-V.

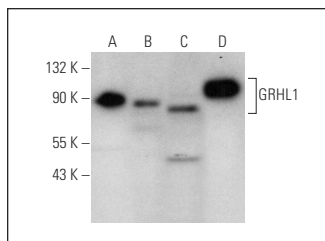
Molecular Weight of GRHL1 isoform 1/2/3: 70/49/58 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, Jurkat whole cell lysate: sc-2204 or DU 145 nuclear extract: sc-24960.

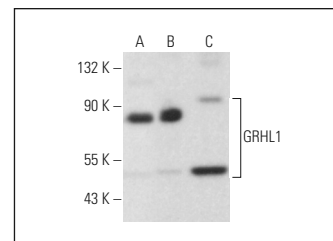
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



GRHL1 (D-2): sc-515541. Western blot analysis of GRHL1 expression in DU 145 (A) and Hep G2 (B) nuclear extracts and Jurkat (C) and HEK293 (D) whole cell lysates.



GRHL1 (D-2): sc-515541. Western blot analysis of GRHL1 expression in Jurkat (A), JAR (B) and NIH/3T3 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- 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.

## 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.