VHL (VHL40): sc-135657

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BIOTECHNOLOGY

The Power to Question

BACKGROUND

Individuals harboring germline mutations in the tumor suppressor gene von Hippel-Lindau (VHL) exhibit an increased susceptibility to a variety of tumors including renal carcinoma, hemangioblastoma of the central nervous system and pheochromocytoma. The Elongin (SIII) complex has been identified as the functional target of the VHL protein. Elongin (SIII) is a heterotrimer composed of a transcriptional active subunit designated Elongin A and two regulatory subunits designated Elongin B and Elongin C. VHL functions by binding to the Elongin B and C subunits, inhibiting the transcriptional efficacy of the Elongin (SIII) complex. Different isoforms of VHL have been observed, encoded by alternatively spliced transcript variants. The molecular weight of each isoform varies between species.

CHROMOSOMAL LOCATION

Genetic locus: VHL (human) mapping to 3p25.3; Vhl (mouse) mapping to 6 E3.

SOURCE

VHL (VHL40) is a mouse monoclonal antibody raised against amino acids 54-213 of VHL of human origin.

PRODUCT

Each vial contains 200 µg IgG$_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

VHL (VHL40) is available conjugated to agarose (sc-135657 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-135657 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-135657 PE), fluorescein (sc-135657 FITC), Alexa Fluor® 488 (sc-135657 AF488), Alexa Fluor® 546 (sc-135657 AF546), Alexa Fluor® 594 (sc-135657 AF594) or Alexa Fluor® 647 (sc-135657 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-135657 AF680) or Alexa Fluor® 790 (sc-135657 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

VHL (VHL40) is recommended for detection of VHL 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for VHL siRNA (h): sc-36816, VHL siRNA (m): sc-36817, VHL shRNA Plasmid (h): sc-36816-SH, VHL shRNA Plasmid (m): sc-36817-SH, VHL shRNA (h) Lentiviral Particles: sc-36816-V and VHL shRNA (m) Lentiviral Particles: sc-36817-V.

Molecular Weight of VHL isoforms: 18/24 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or Daudi cell lysate: sc-2415.
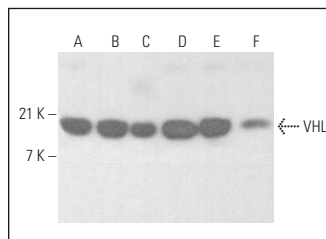
RESEARCH USE

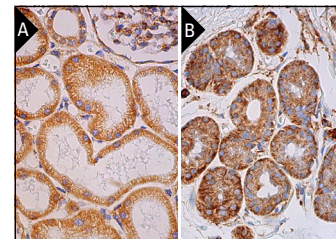For research use only, not for use in diagnostic procedures.

STORAGE

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

DATA

VHL (VHL40): sc-135657. Western blot analysis of VHL expression in HeLa (**A**), Jurkat (**B**), Daudi (**C**), HEK293 (**D**) and Caco-2 (**E**) whole cell lysates and human placenta tissue extract (**F**).

VHL (VHL40): sc-135657. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in glomeruli (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human salivary gland tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Nogales, F.F., et al. 2012. An analysis of five clear cell papillary cystadenomas of mesosalpinx and broad ligament: four associated with von Hippel-Lindau disease and one aggressive sporadic type. Histopathology 60: 748-757.

2. Yamazaki, R., et al. 2017. Antifibrotic effects of cyclosporine A on TGF-β1-treated lung fibroblasts and lungs from bleomycin-treated mice: role of hypoxia-inducible factor-1α. FASEB J. 31: 3359-3371.

3. Sun, C., et al. 2018. EZH2 expression is increased in BAP1-mutant renal clear cell carcinoma and is related to poor prognosis. J. Cancer 9: 3787-3796.

4. Mallikarjuna, P., et al. 2019. Interactions between TGF-β type I receptor and hypoxia-inducible factor-α mediates a synergistic crosstalk leading to poor prognosis for patients with clear cell renal cell carcinoma. Cell Cycle 18: 2141-2156.

5. Wolf, E.R., et al. 2020. Mdm2-mediated neddylation of pVHL blocks the induction of antiangiogenic factors. Oncogene 39: 5228-5239.

6. Zhou, X., et al. 2021. Acute kidney injury instigates malignant renal cell carcinoma via CXCR2 in mice with inactivated Trp53 and Pten in proximal tubular kidney epithelial cells. Cancer Res. 81: 2690-2702.

7. Zeh, N., et al. 2021. Cell line development for continuous high cell density biomanufacturing: exploiting hypoxia for improved productivity. Metab. Eng. Commun. 13: e00181.

8. Liu, H., et al. 2021. Psychological stress drives progression of malignant tumors via DRD2/HIF-1α signaling. Cancer Res. 81: 5353-5365.

PROTOCOLS

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

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