

# SIAH-2 (24E6H3): sc-81787

## BACKGROUND

SIAH-2 (seven in absentia homolog-2) is an E3 ligase that catalyzes ubiquitination and proteasome-mediated degradation of protein substrates. SIAH-2 encodes a 324 amino acid protein that shares 77% identity with human SIAH-1 and 68% identity with the *Drosophila sina* (7 in absentia) gene, on which development of the *Drosophila* R7 photoreceptor is dependent. SIAH-2 targets TRAF2 (which regulates cell responses to stress and cytokines through the regulation of key stress-signaling cascades) for degradation under stress conditions such as hypoxia. It targets HIF-1 $\alpha$  prolyl hydroxylase 3 (PHD3) for degradation upon exposure to hypoxic conditions, which coincides with an increase in SIAH-2 transcription. SIAH-2 can decrease TNF- $\alpha$ -dependent induction of JNK activity and transcriptional activation of NF $\kappa$ B. SIAH-2 null mice subjected to hypoxia display an impaired respiratory response and reduced levels of hemoglobin.

## REFERENCES

1. Della, N.G., et al. 1995. Expression of SIAH-2, a vertebrate homologue of *Drosophila sina*, in germ cells of the mouse ovary and testis. *Cell Tissue Res.* 279: 411-419.
2. Habelhah, H., et al. 2002. Stress-induced decrease in TRAF2 stability is mediated by SIAH-2. *EMBO J.* 21: 5756-5765.
3. Frew, I.J., et al. 2002. Normal p53 function in primary cells deficient for Siah genes. *Mol. Cell. Biol.* 22: 8155-8164.
4. Frew, I.J., et al. 2003. Generation and analysis of SIAH-2 mutant mice. *Mol. Cell. Biol.* 23: 9150-9161.
5. Simon, M.C. 2004. SIAH proteins, HIF prolyl hydroxylases, and the physiological response to hypoxia. *Cell* 117: 851-853.

## CHROMOSOMAL LOCATION

Genetic locus: SIAH2 (human) mapping to 3q25.1; Siah2 (mouse) mapping to 3 D.

## SOURCE

SIAH-2 (24E6H3) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to a region near the N-terminus of SIAH of *Drosophila melanogaster* origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SIAH-2 (24E6H3) is available conjugated to agarose (sc-81787 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-81787 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81787 PE), fluorescein (sc-81787 FITC), Alexa Fluor<sup>®</sup> 488 (sc-81787 AF488), Alexa Fluor<sup>®</sup> 546 (sc-81787 AF546), Alexa Fluor<sup>®</sup> 594 (sc-81787 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-81787 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-81787 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-81787 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

SIAH-2 (24E6H3) is recommended for detection of SIAH-2 of mouse, rat, human and *Drosophila melanogaster* 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with SIAH-1 of human origin.

SIAH-2 (24E6H3) is also recommended for detection of SIAH-2 in additional species, including porcine.

Suitable for use as control antibody for SIAH-2 siRNA (h): sc-37497, SIAH-2 siRNA (m): sc-37498, SIAH-2 shRNA Plasmid (h): sc-37497-SH, SIAH-2 shRNA Plasmid (m): sc-37498-SH, SIAH-2 shRNA (h) Lentiviral Particles: sc-37497-V and SIAH-2 shRNA (m) Lentiviral Particles: sc-37498-V.

Molecular Weight of SIAH-2: 40 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 3) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## SELECT PRODUCT CITATIONS

1. Muller, S., et al. 2014. SIAH2 antagonizes TYK2-STAT3 signaling in lung carcinoma cells. *Oncotarget* 5: 3184-3196.
2. Ong, T., et al. 2020. Siah2 integrates mitogenic and extracellular matrix signals linking neuronal progenitor ciliogenesis with germinal zone occupancy. *Nat. Commun.* 11: 5312.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.