

Shh (E-1): sc-365112



The Power to Question

BACKGROUND

The *Drosophila* segment polarity gene hedgehog (hh) encodes a precursor protein which undergoes autocleavage to generate amino- and carboxy-terminal peptides. Both proteins are secreted and appear to function in embryonic and imaginal disc patterning. Several vertebrate homologs of *Drosophila* hh have been identified. These include Sonic hedgehog (Shh) (alternatively designated Vhh-1), Desert hedgehog (Dhh) and Indian hedgehog (Ihh). Each contain amino-terminal signal peptides and apparently function as secreted proteins involved in the mediation of various cell-cell interactions. Shh resembles *Drosophila* hh in that it is processed to generate an amino-terminal secreted peptide that is retained at or near the cell surface and a carboxy-terminal glycosylated more diffusible peptide.

CHROMOSOMAL LOCATION

Genetic locus: IHH (human) mapping to 2q35, SHH (human) mapping to 7q36.3; Ihh (mouse) mapping to 1 C3, Shh (mouse) mapping to 5 B1.

SOURCE

Shh (E-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 25-57 near the N-terminus of Shh of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Shh (E-1) is available conjugated to agarose (sc-365112 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365112 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365112 PE), fluorescein (sc-365112 FITC), Alexa Fluor® 488 (sc-365112 AF488), Alexa Fluor® 546 (sc-365112 AF546), Alexa Fluor® 594 (sc-365112 AF594) or Alexa Fluor® 647 (sc-365112 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365112 AF680) or Alexa Fluor® 790 (sc-365112 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365112 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Shh (E-1) is recommended for detection of Ihh and Shh 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Shh (E-1) is also recommended for detection of Ihh and Shh in additional species, including equine, canine, porcine and avian.

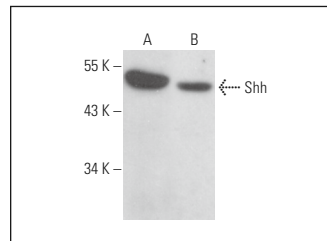
Molecular Weight of Shh precursor: 45 kDa.

Molecular Weight of Shh amino-terminal peptide: 19 kDa.

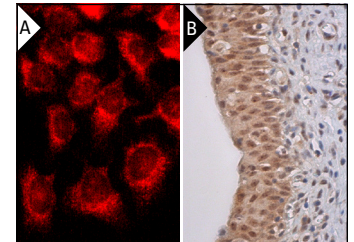
Molecular Weight of Shh carboxy-terminal peptide: 27 kDa.

STORAGE

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

DATA

Shh (E-1): sc-365112. Western blot analysis of Shh expression in NIH/3T3 (A) and ARPE-19 (B) whole cell lysates.



Shh (E-1): sc-365112. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic and nuclear staining of urothelial cells (B).

SELECT PRODUCT CITATIONS

- Zhou, X., et al. 2012. Autocrine Sonic hedgehog attenuates inflammation in cerulein-induced acute pancreatitis in mice via upregulation of IL-10. *PLoS ONE* 7: e44121.
- Xu, M., et al. 2013. ABCB2 (TAP1) as the downstream target of Shh signaling enhances pancreatic ductal adenocarcinoma drug resistance. *Cancer Lett.* 333: 152-158.
- Koufaris, C., et al. 2015. Haploinsufficiency of the miR-873/miR-876 microRNA cluster is associated with craniofacial abnormalities. *Gene* 561: 95-100.
- Sukhotnik, I., et al. 2016. Accelerated intestinal epithelial cell turnover after bowel resection in a rat is correlated with inhibited hedgehog signaling cascade. *Pediatr. Surg. Int.* 32: 1133-1140.
- Zhang, Y.D., et al. 2017. Lentivirus-mediated silencing of the PTC1 and PTC2 genes promotes recovery from spinal cord injury by activating the Hedgehog signaling pathway in a rat model. *Exp. Mol. Med.* 49: e412.
- Peng, F., et al. 2018. Cetuximab enhances cisplatin-induced endoplasmic reticulum stress-associated apoptosis in laryngeal squamous cell carcinoma cells by inhibiting expression of TXNDC5. *Mol. Med. Rep.* 17: 4767-4776.
- Chao, A.C., et al. 2019. Id1 and Sonic hedgehog mediate cell cycle reentry and apoptosis induced by amyloid β-peptide in post-mitotic cortical neurons. *Mol. Neurobiol.* 56: 465-489.
- Ben-Shahar, Y., et al. 2019. Sonic hedgehog signaling controls gut epithelium homeostasis following intestinal ischemia-reperfusion in a rat. *Pediatr. Surg. Int.* 35: 255-261.

RESEARCH USE

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

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