SANTA CRUZ BIOTECHNOLOGY, INC.

Smo (E-5): sc-166685

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Overexpression of either Wnt-1 or the GLI proteins results in cancer; however, the molecular basis for this transformation was poorly understood. The Wnt-1 and GLI proteins have now been placed in a signaling cascade downstream of the mammalian homologs of the *Drosophila* hedgehog and patched proteins. The *Drosophila* segment polarity gene hedgehog (hh) encodes a secreted protein that appears to function in embryonic and imaginal disc patterning. The ptc gene, also identified as a *Drosophila* segment polarity gene, encodes the transmembrane protein patched, the expression of which is precisely regulated during embryonic development. Hedgehog has been shown to enhance the expression of the Wnt family of proteins through a signaling cascade involving the GLI transcription factors, while patched functions as a repressor opposing hedgehog's effects. Smoothened (Smo), a seven transmembrane receptor, is complexed with patched in many tissues and is believed to be an essential component in the Hh signaling pathway.

CHROMOSOMAL LOCATION

Genetic locus: SMO (human) mapping to 7q32.1; Smo (mouse) mapping to 6 A3.3.

SOURCE

Smo (E-5) is a mouse monoclonal antibody raised against amino acids 488-787 of Smo of human origin.

PRODUCT

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

Smo (E-5) is available conjugated to agarose (sc-166685 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166685 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166685 PE), fluorescein (sc-166685 FITC), Alexa Fluor® 488 (sc-166685 AF488), Alexa Fluor® 546 (sc-166685 AF546), Alexa Fluor® 594 (sc-166685 AF594) or Alexa Fluor® 647 (sc-166685 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166685 AF680) or Alexa Fluor® 790 (sc-166685 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Smo (E-5) is available conjugated to biotin (sc-166685 B), 200 µg/ml, for WB, IHC(P) and ELISA.

APPLICATIONS

Smo (E-5) is recommended for detection of Smo 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).

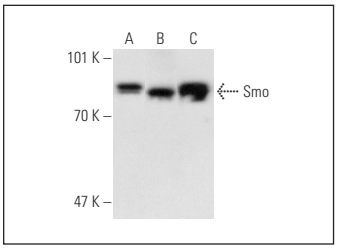
Suitable for use as control antibody for Smo siRNA (h): sc-40161, Smo siRNA (m): sc-40162, Smo shRNA Plasmid (h): sc-40161-SH, Smo shRNA Plasmid (m): sc-40162-SH, Smo shRNA (h) Lentiviral Particles: sc-40161-V and Smo shRNA (m) Lentiviral Particles: sc-40162-V.

Molecular Weight of Smo: 85 kDa.

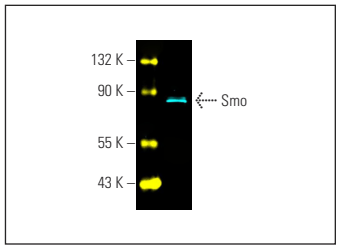
STORAGE

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

DATA



Smo (E-5): sc-166685. Western blot analysis of Smo expression in HeLa (**A**), MIA PaCa-2 (**B**) and K-562 (**C**) whole cell lysates.



Smo (E-5) Alexa Fluor® 647: sc-166685 AF647. Direct fluorescent western blot analysis of Smo expression in K-562 whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 488: sc-516790.

SELECT PRODUCT CITATIONS

1. Polizio, A.H., et al. 2011. Heterotrimeric G_i proteins link hedgehog signaling to activation of Rho small GTPases to promote fibroblast migration. J. Biol. Chem. 286: 19589-19596.
2. Shaheen, R., et al. 2015. Identification of a novel MKS locus defined by TMEM107 mutation. Hum. Mol. Genet. 24: 5211-5218.
3. Papadopoulos, V., et al. 2016. The prognostic significance of the hedgehog signaling pathway in colorectal cancer. Clin. Colorectal Cancer 15: 116-127.
4. Schou, K.B., et al. 2017. KIF13B establishes a CAV1-enriched microdomain at the ciliary transition zone to promote sonic hedgehog signalling. Nat. Commun. 8: 14177.
5. Parascandolo, A., et al. 2018. A dual mechanism of activation of the sonic hedgehog pathway in anaplastic thyroid cancer: crosstalk with RAS-BRAF-MEK pathway and ligand secretion by tumor stroma. Oncotarget 9: 4496-4510.
6. Frikstad, K.M., et al. 2019. A CEP104-CSPP1 complex is required for formation of primary cilia competent in hedgehog signaling. Cell Rep. 28: 1907-1922.
7. Sahinturk, V., et al. 2020. Investigation of endoplasmic reticulum stress and sonic hedgehog pathway in diabetic liver injury in mice. Life Sci. 246: 117416.
8. Wang, Q., et al. 2021. Effects of baohuoside-I on epithelial-mesenchymal transition and metastasis in nasopharyngeal carcinoma. Hum. Exp. Toxicol. 40: 566-576.

RESEARCH USE

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