SANTA CRUZ BIOTECHNOLOGY, INC.

Smo (N-19): sc-6366

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 repessor 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 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Smo of rat origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-6366 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Smo (N-19) is recommended for detection of Smo 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with glcosylated Smo.

Smo (N-19) is also recommended for detection of Smo in additional species, including porcine.

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.

Positive Controls: mouse embryo extract: sc-364239, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

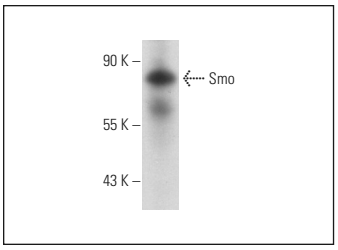
RESEARCH USE

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



Smo (N-19): sc-6366. Western blot analysis of Smo expression in mouse embryo tissue extract.

SELECT PRODUCT CITATIONS

1. Thomas, M.K., et al. 2000. Hedgehog signaling regulation of Insulin production by pancreatic β-cells. Diabetes 49: 2039-2047.
2. Yoshizaki, A., et al. 2006. Expressions of sonic hedgehog, patched, smoothened and Gli-1 in human intestinal stromal tumors and their correlation with prognosis. World J. Gastroenterol. 12: 5687-5691.
3. El Andaloussi, A., et al. 2006. Hedgehog signaling controls thymocyte progenitor homeostasis and differentiation in the thymus. Nat. Immunol. 7: 418-426.
4. Ferretti, E., et al. 2008. Concerted microRNA control of Hedgehog signalling in cerebellar neuronal progenitor and tumour cells. EMBO J. 27: 2616-2627.
5. Varas, A., et al. 2008. Survival and function of human thymic dendritic cells are dependent on autocrine Hedgehog signaling. J. Leukoc. Biol. 83: 1476-1483.
6. Po, A., et al. 2010. Hedgehog controls neural stem cells through p53-independent regulation of Nanog. EMBO J. 29: 2646-2658.
7. Onishi, H., et al. 2011. Hypoxia activates the hedgehog signaling pathway in a ligand-independent manner by upregulation of Smo transcription in pancreatic cancer. Cancer Sci. 102: 1144-1150.
8. L'episcopo, F., et al. 2011. A Wnt1 regulated Frizzled-1/β-Catenin signaling pathway as a candidate regulatory circuit controlling mesencephalic dopaminergic neuron-astrocyte crosstalk: therapeutical relevance for neuron survival and neuroprotection. Mol. Neurodegener. 6: 49.
9. Narayan, K., et al. 2012. Intrathymic programming of effector fates in three molecularly distinct γδ T cell subtypes. Nat. Immunol. 13: 511-518.