

Smo (H-300): sc-13943

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 (H-300) is a rabbit polyclonal antibody raised against amino acids 488-787 mapping at the C-terminus of Smo of human origin.

PRODUCT

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

APPLICATIONS

Smo (H-300) 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).

Smo (H-300) is also recommended for detection of Smo in additional species, including equine, canine, bovine and 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.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

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- Tasaki, A., et al. 2005 Immunohistochemical staining of hedgehog pathway-related proteins in human thymomas. *Anticancer Res.* 25: 3697-3701.
- Liao, X., et al. 2009. Aberrant activation of hedgehog signaling pathway in ovarian cancers: effect on prognosis, cell invasion and differentiation. *Carcinogenesis* 30: 131-140.
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- Nehmé, R., et al. 2010. Stability study of the human G protein-coupled receptor, Smoothened. *Biochim. Biophys. Acta* 1798: 1100-1110.
- Nelson, K.K., et al. 2010. Expression of the sonic hedgehog pathway molecules in synchronous follicular adenoma and papillary carcinoma of the thyroid gland in predicting malignancy. *Surgery* 148: 654-660; discussion 660.
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- Bishop, C.L., et al. 2010. Primary cilium-dependent and -independent Hedgehog signaling inhibits p16(INK4A). *Mol. Cell* 40: 533-547.
- Nguyen, N.T., et al. 2011. Sonic hedgehog supplementation of oocyte and embryo culture media enhances development of IVF porcine embryos. *Reproduction* 142: 87-97.
- Chung, C.H., et al. 2011. Glioma-associated oncogene family zinc finger 1 expression and metastasis in patients with head and neck squamous cell carcinoma treated with radiation therapy (RTOG 9003). *J. Clin. Oncol.* 29: 1326-1334.

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