

patched (3B3): sc-293416



The Power to Question

BACKGROUND

Overexpression of either Wnt-1 or the GLI proteins have been shown to result in cancer. These proteins exist in a signal cascade downstream of the mammalian homologs of the *Drosophila* hedgehog (hh) and patched (ptc) proteins. The hedgehog protein mediates embryonic and imaginal disc patterning, and patched expression is precisely regulated during embryonic development. Hedgehog enhances 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. Mutations in the ptc gene, which result in unregulated hedgehog signaling, correlates with the most common type of cancer, basal cell carcinoma, which affects 750,000 individuals annually in the United States. An additional patched family member, patched 2, has been found to be coexpressed with Sonic hedgehog.

REFERENCES

1. Nusslein-Volhard, C., et al. 1980. Mutations affecting segment number and polarity in *Drosophila*. *Nature* 287: 795-801.
2. Kinzler, K.W., et al. 1987. Identification of an amplified, highly expressed gene in a human glioma. *Science* 236: 70-73.
3. Parkin, N.T., et al. 1993. Activity of Wnt-1 as a transmembrane protein. *Genes Dev.* 7: 2181-2193.
4. Johnson, R.L., et al. 1995. The long and short of hedgehog signaling. *Cell* 81: 313-316.
5. Marti, E., et al. 1995. Requirement of 19K form of sonic hedgehog for induction of distinct ventral cell types in CNS explants. *Nature* 375: 322-325.

CHROMOSOMAL LOCATION

Genetic locus: PTCH1 (human) mapping to 9q22.32.

SOURCE

patched (3B3) is a mouse monoclonal antibody raised against amino acids 651-750 representing full length patched of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

patched (3B3) is recommended for detection of patched of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for patched siRNA (h): sc-36192, patched shRNA Plasmid (h): sc-36192-SH and patched shRNA (h) Lentiviral Particles: sc-36192-V.

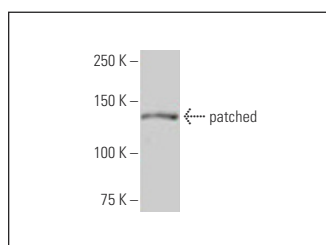
Molecular Weight of patched: 140 kDa.

Positive Controls: Y-79 whole cell lysate.

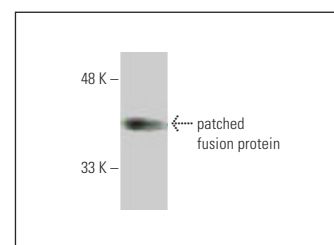
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



patched (3B3): sc-293416. Western blot analysis of patched expression in Y-79 whole cell lysate.



patched (3B3): sc-293416. Western blot analysis of human recombinant patched fusion protein.

SELECT PRODUCT CITATIONS

1. Kim, Y., et al. 2020. Ptch2/Gas1 and Ptch1/Boc differentially regulate Hedgehog signalling in murine primordial germ cell migration. *Nat. Commun.* 11: 1994.
2. Lee, S., et al. 2020. Effect of oocyte quality assessed by brilliant cresyl blue (BCB) staining on cumulus cell expansion and Sonic hedgehog signaling in porcine during *in vitro* maturation. *Int. J. Mol. Sci.* 21: 4423.
3. Lee, J., et al. 2023. Coordination of canonical and noncanonical Hedgehog signalling pathways mediated by WDR11 during primordial germ cell development. *Sci. Rep.* 13: 12309.
4. Liu, X., et al. 2024. Numb positively regulates Hedgehog signaling at the ciliary pocket. *Nat. Commun.* 15: 3365.
5. Ortega-Carballo, K.J., et al. 2024. Characterization of a model of liver regeneration: role of hedgehog signaling in experimental hepatic amoebiasis. *Pathol. Res. Pract.* 260: 155452.

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 for detailed protocols and support products.