SANTA CRUZ BIOTECHNOLOGY, INC.

patched (A-2): sc-518044

SANTA CRUZ BIOTECHNOLOGY

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 discpatterning, 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.

CHROMOSOMAL LOCATION

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

SOURCE

patched (A-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1401-1429 within a C-terminal cytoplasmic domain of patched 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.

patched (A-2) is available conjugated to agarose (sc-518044 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-518044 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518044 PE), fluorescein (sc-518044 FITC), Alexa Fluor® 488 (sc-518044 AF488), Alexa Fluor® 546 (sc-518044 AF546), Alexa Fluor® 594 (sc-518044 AF594) or Alexa Fluor® 647 (sc-518044 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518044 AF680) or Alexa Fluor® 790 (sc-518044 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

patched (A-2) is recommended for detection of patched of 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 patched siRNA (h): sc-36192, patched shRNA Plasmid (h): sc-36192-SH and patched shRNA (h) Lentiviral Particles: sc-36192-V.

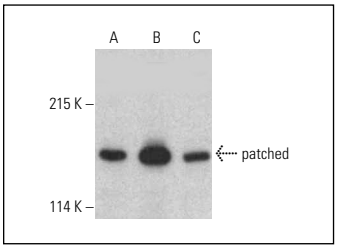
Molecular Weight of Patched: 140 kDa.

Positive Controls: Ramos cell lysate: sc-2216, NAMALWA cell lysate: sc-2234 or NCI-H929 whole cell lysate: sc-364786.

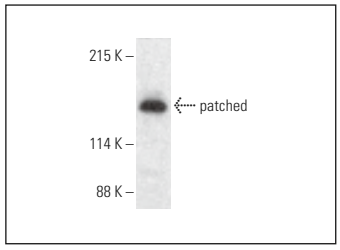
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



patched (A-2): sc-518044. Western blot analysis of patched expression in NAMALWA (**A**), GA-10 (**B**) and NCI-H929 (**C**) whole cell lysates.



patched (A-2): sc-518044. Western blot analysis of patched expression in Ramos whole cell lysate.

SELECT PRODUCT CITATIONS

1. Tang, J., et al. 2019. SOX2 mediates crosstalk between sonic hedgehog and the Wnt/β-catenin signaling pathway to promote proliferation of pituitary adenoma cells. Oncol. Lett. 18: 81-86.
2. Wofford, W., et al. 2024. Alterations of ceramide synthesis induce PD-L1 internalization and signaling to regulate tumor metastasis and immunotherapy response. Cell Rep. 43: 114532.

RESEARCH USE

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