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SHH Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1725a

Product Information

Application	WB, IHC, FC, E
Primary Accession	Q15465
Reactivity	Human, Mouse, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	5H4
Isotype	IgG1
Calculated MW	49607
Description	This gene encodes a protein that is instrumental in patterning the early embryo. It has been implicated as the key inductive signal in patterning of the ventral neural tube, the anterior-posterior limb axis, and the ventral somites. Of three human proteins showing sequence and functional similarity to the sonic hedgehog protein of Drosophila, this protein is the most similar. The protein is made as a precursor that is autocatalytically cleaved; the N-terminal portion is soluble and contains the signalling activity while the C-terminal portion is involved in precursor processing. More importantly, the C-terminal product covalently attaches a cholesterol moiety to the N-terminal product, restricting the N-terminal product to the cell surface and preventing it from freely diffusing throughout the developing embryo. Defects in this protein or in its signalling pathway are a cause of holoprosencephaly (HPE), a disorder in which the developing forebrain fails to correctly separate into right and left hemispheres. HPE is manifested by facial deformities. It is also thought that mutations in this gene or in its signalling pathway may be responsible for VACTERL syndrome, which is characterized by vertebral defects, anal atresia, tracheoesophageal fistula with esophageal atresia, radial and renal dysplasia, cardiac anomalies, and limb abnormalities. Additionally, mutations in a long range enhancer located approximately 1 megabase upstream of this gene disrupt limb patterning and can result in preaxial polydactyly.
Immunogen	Purified recombinant fragment of human SHH (AA: 26-161) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	6469
Other Names	Sonic hedgehog protein, SHH, HHG-1, Sonic hedgehog protein N-product, Sonic hedgehog protein C-product, SHH

Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1/200 - 1/400 E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SHH Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SHH {ECO:0000303|PubMed:7590746, ECO:0000312|HGNC:HGNC:10848}
Function	[Sonic hedgehog protein]: Precursor of sonic hedgehog, a morphogen that activates the smoothened signaling pathway, and which is essential for a variety of patterning events during development (PubMed:29954986, PubMed:29995851, PubMed:30139912, PubMed:31127104, PubMed:31548691). The C-terminal part of the precursor displays an autoproteolysis and a cholesterol transferase activity, resulting (1) in the cleavage of the full-length protein into two parts, Sonic hedgehog protein N-product and C-product (ShhN and ShhC, respectively) and (2) covalent attachment of a cholesterol moiety to the C-terminus of the newly generated ShhN (By similarity). Both autoproteolysis and a cholesterol transferase activities occur in the endoplasmic reticulum (By similarity). Following additional lipidation, ShhN acts as a morphogen, while ShhC is degraded in the endoplasmic reticulum (By similarity).
Cellular Location	[Sonic hedgehog protein]: Endoplasmic reticulum membrane. Golgi apparatus membrane. Note=Co-localizes with HHAT in the ER and Golgi membrane.

References

1.Br J Cancer. 2010 Feb 16;102(4):738-47. 2.Mol Cancer. 2009 Dec 16;8:123.

Images

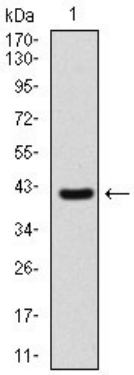
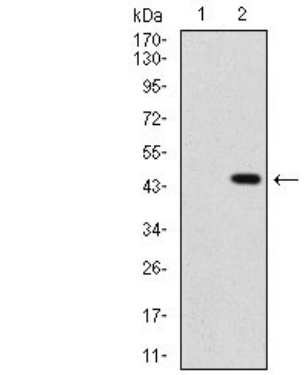


Figure 1: Western blot analysis using SHH mAb against human SHH recombinant protein. (Expected MW is 41 kDa)

Figure 2: Western blot analysis using SHH mAb against HEK293 (1) and SHH (AA: 26-161)-hIgGFc transfected HEK293 (2) cell lysate.



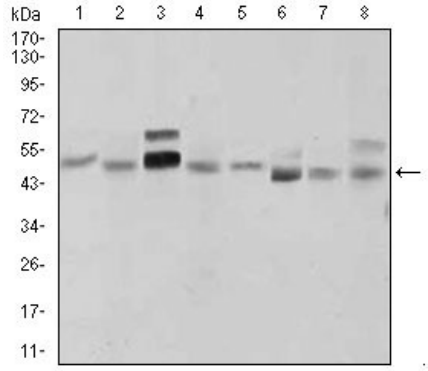


Figure 3: Western blot analysis using SHH mouse mAb against LNCaP (1), HepG2 (2), PANC-1 (3),HeLa (4), SK-N-SH (5), F9 (6), NIH3T3 (7), and COS7 (8) cell lysate.

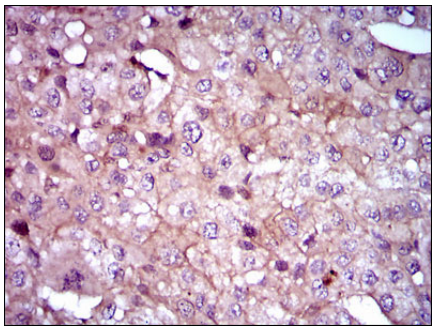


Figure 4: Immunohistochemical analysis of paraffin-embedded liver cancer tissues using SHH mouse mAb with DAB staining.

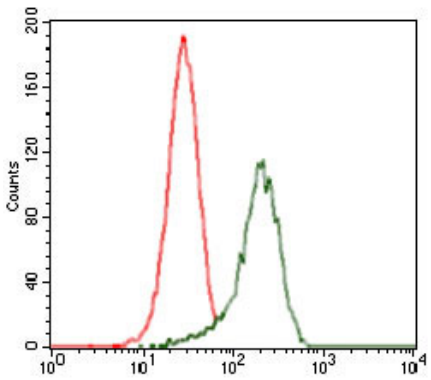


Figure 5: Flow cytometric analysis of HeLa cells using SHH mouse mAb (green) and negative control (red).

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