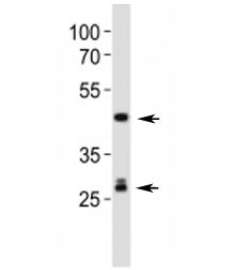
Shh Antibody / Sonic Hedgehog (F53068)

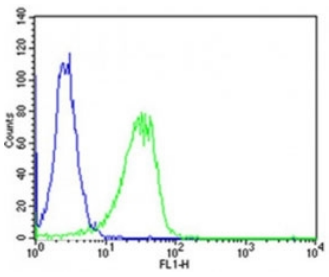
Catalog No.	Formulation	Size
F53068-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F53068-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	Q62226
Applications	Flow Cytometry : 1:25 Western Blot : 1:1000 (1)
Limitations	This Shh antibody is available for research use only.



Western blot analysis of lysate from mouse liver tissue lysate using Shh antibody. Predicted molecular weight: 45/27/19 kDa (1)



Flow cytometric analysis of HeLa cells using Shh antibody (green) compared to an isotype control of rabbit IgG (blue); Ab was diluted at 1:25 dilution. An Alexa Fluor 488 goat anti-rabbit IgG was used as the secondary Ab.

Description

SHH antibody targets Sonic Hedgehog (SHH), a secreted morphogen that functions as a master regulator of developmental patterning and cell fate determination. SHH is produced as a precursor protein that undergoes autocatalytic cleavage to generate an active N-terminal signaling fragment, which is further modified by lipid attachment to control its stability, distribution, and signaling range. Following secretion, SHH acts in a concentration-dependent manner to regulate gene expression programs in responding cells. The protein is primarily localized to the extracellular space and signaling microenvironments, consistent with its role as a long-range signaling ligand.

Functionally, SHH initiates Hedgehog pathway signaling by binding to the Patched receptor, relieving repression of Smoothened and triggering downstream activation of GLI transcription factors. This signaling cascade governs critical processes such as neural tube patterning, limb development, organogenesis, and stem cell maintenance. Precise spatial and temporal control of SHH expression is essential for normal embryonic development, as both insufficient and excessive signaling can disrupt tissue organization. An SHH antibody supports studies examining morphogen gradients and developmental signaling mechanisms.

SHH also contributes to tissue homeostasis and repair in adult organisms, where regulated Hedgehog signaling influences progenitor cell behavior and regeneration. Misregulation of SHH signaling can lead to abnormal proliferation and differentiation, highlighting the importance of tightly controlled ligand expression and pathway activity. Analysis of SHH expression provides insight into Hedgehog pathway activation states across developmental and experimental contexts.

From a biological and disease-relevance perspective, SHH has been extensively studied in congenital developmental disorders and cancer biology. Aberrant activation of Hedgehog signaling driven by SHH contributes to tumorigenesis in several tissue types. As a central pathway ligand, SHH is frequently examined in studies of signaling dysregulation, disease mechanisms, and pathway modulation strategies.

At the molecular level, SHH is encoded by the SHH gene and produces a precursor protein that is processed to yield the active signaling domain responsible for pathway activation. SHH activity is regulated through controlled expression, post-translational processing, secretion, and interaction with pathway receptors. An SHH antibody supports research applications focused on developmental biology, signal transduction, and Hedgehog pathway analysis, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Titration of the Shh antibody may be required due to differences in protocols and secondary/substrate sensitivity.

1. The 45 kDa precursor protein autocleaves into 27 kDa amino and 19 kDa carboxy fragments.

Immunogen

A portion of amino acids 395-450 were used as immunogen for this Shh antibody.

Storage

Aliquot the Shh antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.