

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Shh C-terminal peptide in direct ELISAs and Western blots. In these formats, less than 5% cross-reactivity with recombinant mouse (rm) Dhh C-terminal peptide is observed and less than 1% cross-reactivity with a 6X histidine-tagged rmShh N-terminal peptide (amino acids 25-198) is observed. Detects human and mouse Sonic Hedgehog protein in Western blots. Shh C-terminal peptide specific IgG was purified by first passing the goat sera over a mouse Shh N-terminal peptide affinity column. The unbound fraction from the mouse Shh N-terminal peptide affinity column was subsequently purified using a mouse Shh C-terminal peptide affinity column.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant mouse Sonic Hedgehog Cys25-Ser437 with a Lys122Arg substitution Accession # Q62226
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

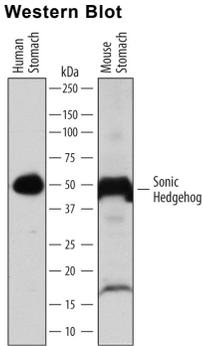
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	1 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below

DATA

Western Blot



Detection of Human and Mouse Sonic Hedgehog/Shh by Western Blot. Western blot shows lysates of human stomach tissue and mouse stomach tissue. PVDF membrane was probed with 1 µg/mL of Goat Anti-Mouse Sonic Hedgehog/Shh C-Terminus Antigen Affinity-purified Polyclonal Antibody (Catalog # AF445) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for Sonic Hedgehog/Shh at approximately 50 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



Sonic Hedgehog in Mouse Spinal Cord. Sonic Hedgehog was detected in immersion fixed frozen sections of mouse spinal cord using 15 µg/mL Mouse Sonic Hedgehog C-Terminus Antigen Affinity-purified Polyclonal Antibody (Catalog # AF445) overnight at 4 °C. Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Frozen Tissue Sections](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

The *hedgehog* (*hh*) gene encoding a secreted protein was originally identified in *Drosophila* as a segment polarity gene. The vertebrate homologues of Hh comprise several proteins including sonic hedgehog (Shh), Indian hedgehog (Ihh), and Desert hedgehog (Dhh). Hedgehog proteins are important signaling molecules during embryonic development. Shh genes are highly conserved and have been identified in a variety of species including human, mouse, frog, fish, and chicken. Mouse and human Shh are 92% identical at the amino acid sequence level. Shh is expressed in key embryonic tissues such as the Hensen's node, the zone of polarizing activity in the posterior limb bud, the notochord, and the floor plate of the neural tube. Shh is involved in regulating the patterning of the developing central nervous system, somite, and limb. Shh plays an important role in the development of particular tissues such as whisker, hair, foregut, tooth and bone. Evidence also suggests that Shh is involved in regulating stem cell fates of neural and hematopoietic lineages, and that aberrant Shh signaling is implicated in basal cell carcinomas and other diseases.

Mouse Shh cDNA encodes a 437 amino acid residue with a predicted 24 aa residue signal peptide that is cleaved to generate a 413 aa residue precursor protein. An autocatalytic reaction yields a 19 kDa amino-terminal domain Shh-N protein containing cholesterol and palmitate, and a 27 kDa carboxy-terminal domain Shh-C protein. The N-terminal domain retains all known signaling capabilities, while the C-terminal domain is responsible for the intramolecular processing, acting as a cholesterol transferase. Shh can act as both a short-range contact dependent factor and as a long-range, diffusible morphogen. At the cell surface, Shh activity is mediated by a multicomponent receptor complex involving the 12-pass transmembrane protein Patched (Ptc) which binds Shh with high affinity and Smoothed (Smo), a signaling seven transmembrane G-protein coupled receptor. In the absence of Shh, Ptc represses Smo activity. The binding of Shh to Ptc, releases the basal repression of Smo by Ptc.