SunLong Biotech Co.,LTD
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[Primary Antibody]

Rabbit Anti-Shh antibody

Catalog Number: SL1544R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	Shh
Immunogen:	KLH conjugated synthetic peptide derived from human Shh: 21-120/462
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	WB=1:500-2000 IHC-P=1:100-500 IHC-F=1:100-500 IF=1:100-500 （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Mouse,Rat(predicted:Human,Chicken,Cow,Horse,Rabbit)
Predicted MW.:	19/47kDa
Subcellular Location:	The cell membrane Extracellular matrix Secretory protein
Background:	SHH binds to the patched (PTC) receptor, which functions in association with smoothened (SMO), to activate the transcription of target genes. In the absence of SHH, PTC represses the constitutive signaling activity of SMO. Also regulates another target, the gli oncogene. Intercellular signal essential for a variety of patterning events during development: signal produced by the notochord that induces ventral cell fate in the neural tube and somites, and the polarizing signal for patterning of the anterior-posterior axis of the developing limb bud. Displays both floor plate- and motor neuron-inducing activity. The threshold concentration of N-product required for motor neuron induction is 5-fold lower than that required for floor plate induction (By similarity). **Function:** Binds to the patched (PTC) receptor, which functions in association with smoothened (SMO), to activate the transcription of target genes. In the

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	absence of SHH, PTC represses the constitutive signaling activity of SMO. Also regulates another target, the gli oncogene. Intercellular signal essential for a variety of patterning events during development: signal produced by the notochord that induces ventral cell fate in the neural tube and somites, and the polarizing signal for patterning of the anterior-posterior axis of the developing limb bud. Displays both floor plate- and motor neuron-inducing activity. The threshold concentration of N-product required for motor neuron induction is 5-fold lower than that required for floor plate induction (By similarity). **Subunit:** Interacts with HHATL/GUP1 which negatively regulates HHAT-mediated palmitoylation of the SHH N-terminus. N-product is active as a multimer. **Subcellular Location:** Sonic hedgehog protein C-product: Secreted, extracellular space. Note=The C-terminal peptide diffuses from the cell. Sonic hedgehog protein N-product: Cell membrane; Lipid-anchor. Note=The N-product either remains associated with lipid rafts at the cell surface, or forms freely diffusible active multimers with its hydrophobic lipid-modified N- and C-termini buried inside. **Tissue Specificity:** Expressed in fetal intestine, liver, lung, and kidney. Not expressed in adult tissues. **Post-translational modifications:** The C-terminal domain displays an autoproteolysis activity and a cholesterol transferase activity. Both activities result in the cleavage of the full-length protein and covalent attachment of a cholesterol moiety to the C-terminal of the newly generated N-terminal fragment (N-product). The N-product is the active species in both local and long-range signaling, whereas the C-product has no signaling activity. Cholesterylation is required for N-product targeting to lipid rafts and multimerization (By similarity). N-palmitoylation of Cys-24 by HHAT is required for N-product multimerization and full activity (By similarity). DISEASE: Defects in SHH are the cause of microphthalmia isolated with coloboma type 5 (MCOPCB5) [MIM:611638]. Microphthalmia is a clinically heterogeneous disorder of eye formation, ranging from small size of a single eye to complete bilateral absence of ocular tissues. Ocular abnormalities like opacities of the cornea and lens, scaring of the retina and choroid, cataract and other abnormalities like cataract may also be present. Ocular colobomas are a set of malformations resulting from abnormal morphogenesis of the optic cup and stalk, and the fusion of the fetal fissure (optic fissure). Defects in SHH are the cause of holoprosencephaly type 3 (HPE3) [MIM:142945]. Holoprosencephaly (HPE) [MIM:236100] is the most common structural anomaly of the brain, in which the developing forebrain

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	fails to correctly separate into right and left hemispheres. Holoprosencephaly is genetically heterogeneous and associated with several distinct facies and phenotypic variability. The majority of HPE3 cases are apparently sporadic, although clear examples of autosomal dominant inheritance have been described. Interestingly, up to 30% of obligate carriers of HPE3 gene in autosomal dominant pedigrees are clinically unaffected. Defects in SHH are a cause of solitary median maxillary central incisor (SMMCI) [MIM:147250]. SMMCI is a rare dental anomaly characterized by the congenital absence of one maxillary central incisor. Defects in SHH are the cause of triphalangeal thumb-polysyndactyly syndrome (TPTPS) [MIM:174500]. TPTPS is an autosomal dominant syndrome characterized by a wide spectrum of pre- and post-axial abnormalities due to altered SHH expression pattern during limb development. TPTPS mutations have been mapped to the 7q36 locus in the LMBR1 gene which contains in its intron 5 a long-range cis-regulatory element of SHH expression. **Similarity:** Belongs to the hedgehog family. **Database links:** **Entrez Gene:** 6469 Human Omim: 600725 Human **SwissProt:** Q15465 Human **Unigene:** 164537 Human Shhis a secreted signaling glycoprotein in the Hedgehog (Hh) Signal transduction pathway, and is also an important factor in regulating the differentiation and development of embryonic tissues, with high conservation.

[VALIDATION IMAGES]

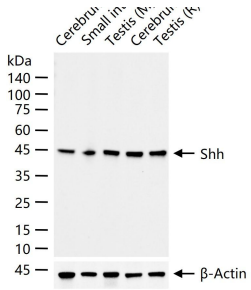


Figure 1. 25 ug total protein per lane of various lysates (see on figure) probed with Shh polyclonal antibody, unconjugated (SL1544R) at 1:1000 dilution and 4°C overnight incubation. Followed by conjugated secondary antibody incubation at r.t. for 60 min

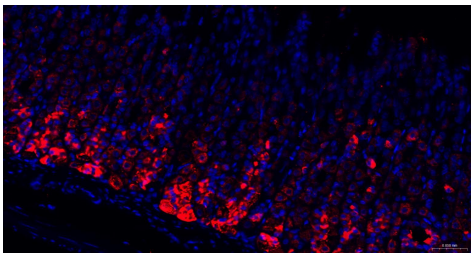


Figure 2. Paraformaldehyde-fixed, paraffin embedded Mouse Stomach; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; The section was incubated with Shh Polyclonal Antibody, Unconjugated (SL1544R) at 1:200 overnight at 4°C. Followed by conjugated Goat Anti-Rabbit IgG antibody (Red, SL0295G-BF594), DAPI (blue, C02-04002) was used to stain the cell nuclei

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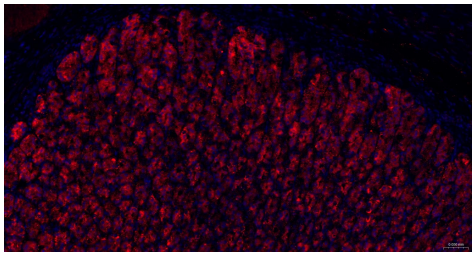


Figure 3. Paraformaldehyde-fixed, paraffin embedded Rat Stomach; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; The section was incubated with Shh Polyclonal Antibody, Unconjugated (SL1544R) at 1:200 overnight at 4°C. Followed by conjugated Goat Anti-Rabbit IgG antibody (Red, SL0295G-BF594), DAPI (blue, C02-04002) was used to stain the cell nuclei

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