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Shh

Catalog # PVGS1173

Product Information

Primary Accession	Q15465
Species	Human
Sequence	Ile22-Gly197 (Ala23Val, Cys24Ile)
Purity	> 98% as analyzed by SDS-PAGE > 98% as analyzed by HPLC
Endotoxin Level	
Biological Activity	Fully biologically active when compared to standard. The ED_{50} as determined by inducing alkaline phosphatase production of murine C3H/10T1/2 cells is less than 1.0 □g/ml, corresponding to a specific activity of > 1.0×10^3 IU/mg.
Expression System	E. coli
Theoretical Molecular Weight	19.8 kDa
Formulation	Lyophilized from a 0.2 □m filtered solution in 20 mM PB, pH 7.4, 150 mM NaCl.
Reconstitution	It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/ml.
Storage & Stability	Upon receiving, this product remains stable for up to 6 months at -70°C or -20°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. Avoid repeated freeze-thaw cycles.

Additional Information

Gene ID	6469
Other Names	Sonic hedgehog protein, SHH, 3.1.-.-, HHG-1, Shh unprocessed N-terminal signaling and C-terminal autoprocessing domains, ShhNC, Sonic hedgehog protein N-product, ShhN, Shh N-terminal processed signaling domains, ShhNp, SHH (HGNC:10848)
Target Background	Members of the Hedgehog (Hh) family are highly conserved proteins which are widely represented throughout the animal kingdom. The three known mammalian Hh proteins, Sonic (Shh), Desert (Dhh) and Indian (Ihh) are structurally related and share a high degree of amino-acid sequence identity (e.g., Shh and Ihh are 93% identical). The biologically active form of Hh molecules is obtained by autocatalytic cleavage of their precursor proteins and corresponds to approximately the N-terminal one half of the precursor

molecule. Although Hh proteins have unique expression patterns and distinct biological roles within their respective regions of secretion, they use the same signaling pathway and can substitute for each other in experimental systems.

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.

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