SHH Protein, Human (HEK293, His)

Cat. No.:	HY-P73417
Synonyms:	Sonic Hedgehog Protein; SHH; HHG-1; ShhNC
Species:	Human
Source:	HEK293
Accession:	Q15465 (M1-G197)
Gene ID:	6469
Molecular Weight:	Approximately 24 kDa

PROPERTIES

Biological Activity	Measured by its ability to induce alkaline phosphatase production by C3H10T1/2 mouse embryonic fibroblast cells and the ED_{50} is typically 1-10 μg/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The sonic hedgehog (SHH) protein precursor undergoes autoproteolysis and cholesterol transferase activity in its C-terminal part, leading to the cleavage of the full-length protein into two fragments, ShhN and ShhC, with the covalent attachment of a cholesterol moiety to the C-terminus of the newly generated ShhN. These processes occur in the endoplasmic reticulum, where ShhC is subsequently degraded. The dually lipidated sonic hedgehog protein N-product (ShhNp) serves as a morphogen essential for diverse patterning events in development. ShhNp induces ventral cell fate in the neural tube and somites, participates in anterior-posterior axis patterning in the developing limb bud, and plays a crucial role in axon guidance. SHH binds to the patched (PTCH1) receptor, working in conjunction with smoothened (SMO), to activate the transcription of target genes. In the absence of SHH, PTCH1 represses the constitutive signaling activity of SMO.

Caution: Product has not been fully validated for medical applications. For research use only.

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