

Active Recombinant Human SHH Protein, Pre-aliquoted

Cat. No. SHH-04H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human SHH Protein, Cys24 - Gly197 (Cys24Ile-Ile), with N-terminal Met, was expressed in E. coli.
Species	Human
Source	E.coli
ProteinLength	Cys24-Gly197 (Cys24Ile-Ile), with N-terminal Met
Description	This gene encodes a protein that is instrumental in patterning the early embryo. It has been implicated as the key inductive signal in patterning of the ventral neural tube, the anterior-posterior limb axis, and the ventral somites. Of three human proteins showing sequence and functional similarity to the sonic hedgehog protein of Drosophila, this protein is the most similar. The protein is made as a precursor that is autocatalytically cleaved; the N-terminal portion is soluble and contains the signalling activity while the C-terminal portion is involved in precursor processing. More importantly, the C-terminal product covalently attaches a cholesterol moiety to the N-terminal product, restricting the N-terminal product to the cell surface and preventing it from freely diffusing throughout the developing embryo. Defects in this protein or in its signalling pathway are a cause of holoprosencephaly (HPE), a disorder in which the developing forebrain fails to correctly separate into right and left hemispheres. HPE is manifested by facial deformities. It is also thought that mutations in this gene or in its signalling pathway may be responsible for VACTERL syndrome, which is characterized by vertebral defects, anal atresia, tracheoesophageal fistula with

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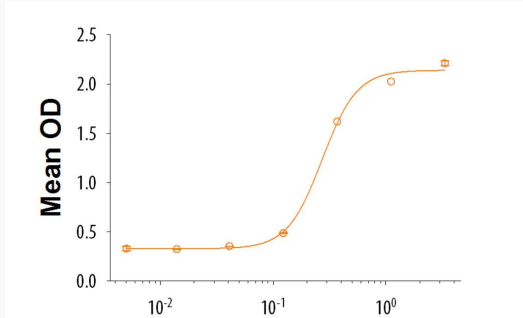
	esophageal atresia, radial and renal dysplasia, cardiac anomalies, and limb abnormalities. Additionally, mutations in a long range enhancer located approximately 1 megabase upstream of this gene disrupt limb patterning and can result in preaxial polydactyly.
Bio-activity	Measured by its ability to induce alkaline phosphatase production by C3H10T1/2 mouse embryonic fibroblast cells. The ED50 for this effect is typically 0.1-0.4 µg/mL.
Molecular Mass	Predicted Molecular Mass:20 kDa SDS-PAGE: 22 kDa, reducing conditions
N-terminal Sequence Analysis	Met
Endotoxin	< 0.01 EU/µg of the protein by the LAL method.
Purity	> 95% by SDS-PAGE under reducing conditions and visualized by silver stain.
Stability	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. • 6 months from date of receipt at room temperature as supplied. • 12 months from date of receipt at 2-8 centigrade as supplied. • 1 month at 2-8 centigrade under sterile conditions after reconstitution. • 3 months at -20 to -80 centigrade under sterile conditions after reconstitution.
Reconstitution	For a stock solution, reconstitute at 100 µg/mL in sterile PBS, or simply roll Pre-aliquoted directly into cell culture medium for immediate use.
Shipping	The product is shipped at ambient temperature.

GENE INFORMATION

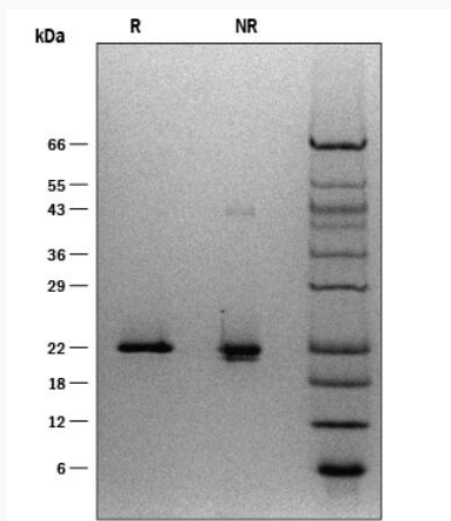
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Gene Name	SHH sonic hedgehog signaling molecule [Homo sapiens (human)]
Official Symbol	SHH
Synonyms	SHH; sonic hedgehog signaling molecule; TPT; HHG1; HLP3; HPE3; SMMCI; ShhNC; TPTPS; MCOPCB5; sonic hedgehog protein; shh unprocessed N-terminal signaling and C-terminal autoprocessing domains; sonic hedgehog homolog
Gene ID	6469
mRNA Refseq	NM_000193
Protein Refseq	NP_000184
MIM	600725
UniProt ID	Q15465
Bio-activity	 Recombinant Human Sonic Hedgehog/Shh (C24II), N-Terminus induces alkaline phosphatase production by the C3H10T1/2 mouse embryonic fibroblast cell line. The ED50 for this effect is typically 0.1-0.4 µg/mL.

SDS-PAGE



1 µg/lane of Recombinant Human Sonic Hedgehog/Shh (C24II), N-Terminus was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing a single band at 22 kDa.