

## SHH Human

**Description:** Sonic HedgeHog Recombinant Human produced in E.Coli is a single, non-glycosylated polypeptide chain containing 175 amino acids and having a molecular mass of 19,683 Dalton. The Human Sonic Hedgehog is 99% homologous to the mouse gene. Cysteine at position 25 has been substituted with Ile. The Sonic HedgeHog is purified by proprietary chromatographic techniques.

**Synonyms:** SHH, HHG-1, HHG1, Sonic hedgehog protein, TPT, HLP3, HPE3, SMMCI, TPTPS, MCOPCB5.

**Source:** Escherichia Coli.

**Physical Appearance:** Sterile Filtered White lyophilized (freeze-dried) powder.

**Amino Acid Sequence:** IIGPGRGFG KRRHPKLTLP LAYKQFIPNV AEKTLGASGR  
YEGKITRNSE RFKELTPNYN PDIIFKDEEN TGADRLMTQR CKDKLNALAI SVMNQWPGVK  
LRVTEGWDED GHHSEESLHY EGRAVDITTS DRDRSKYGML ARLAVEAGFD WVYYESKAHI  
HCSVKAENSV AAKSGG.

**Purity:** Greater than 97.0% as determined by (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

**Formulation:**

Lyophilized from a concentrated (1mg/ml) solution in water containing 10mM sodium Phosphate buffer pH-7.5.

**Stability:**

Lyophilized Human Sonic HedgeHog although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Sonic HedgeHog should be stored at 4°C between 2-7 days and for future use below -18°C. Please prevent freeze-thaw cycles.

**Usage:**

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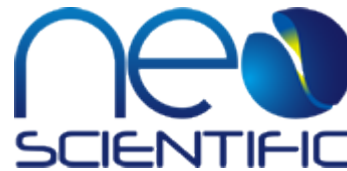
**Solubility:**

It is recommended to reconstitute the lyophilized Sonic HedgeHog with sterile water at a concentration of 0.1 0.5 mgs/ml, which can be further diluted into other aqueous solutions.

**Introduction:**

Recombinant Human Sonic Hedgehog is part of a small group of secreted proteins that are vital for development in both vertebrates and invertebrates. 3 mammalian hedgehog genes (sonic, desert, Indian) share about 60% homology. The Human Sonic Hedgehog is 99% homologous to the mouse gene. Sonic HedgeHog is a protein that is vital in guiding the early embryo. It has been associated as the major inductive signal in patterning of the ventral neural tube, the anterior-posterior limb axis, and the ventral somites. Sonic HedgeHog binds to the patched receptor, which functions in association with smoothened, to activate the transcription of target genes. In the absence of sonic HedgeHog, patched receptor represses the constitutive signaling activity of smoothened. Sonic HedgeHog also regulates another factor, the gli oncogene. Sonic

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HedgeHog intercellular signal is essential for a various 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. Sonic HedgeHog exhibits both floor plate- and motor neuron-inducing activity. Mutations in a long-range Sonic HedgeHog enhancer located in an intron of the limb region 1 gene result in preaxial polydactyly.

Catalog #:CYP5-683

For research use only.

**Biological Activity:**

The ED50, determined by the dose-dependent induction of alkaline phosphatase production by C3H10T1/2 fibroblasts is 760ng/ml, corresponding to a specific activity of 1315.8IU/mg.

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