

## Recombinant Human Sonic HedgeHog (rh SHH)

**Synonyms:** HHG-1, HHG1, Sonic hedgehog protein.

**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 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.

**Description:** Recombinant human Sonic HedgeHog produced produced in E.Coli is a single, non-glycosylated polypeptide chain containing 179 amino acids and having a molecular mass of 20.1 kDa. The Cys at position 2 has been substituted with 2 Ile's.

**Source:** *Escherichia Coli*

**Physical Appearance:** Sterile filtered white lyophilized (freeze-dried) powder.

**Formulation:** Lyophilized from 10mM Na<sub>3</sub>PO<sub>4</sub>, pH 7.5. .  
The aliquotes of 1µg contain Trehalose 5% (w/vol) for better recovery

**Solubility:** It is recommended to reconstitute the lyophilized rh SHH in sterile wwater not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

**Stability:** Lyophilized rh SHH although stable at room temperature for 3 weeks, should be stored desiccated below -18° C. Upon reconstitution rh SHH should be stored at 4° C between 2-7 days and for future use below -18° C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

**Purity:** Greater than 97.0% as determined by RP-HPLC and by SDS-PAGE.

**Amino Acid Sequence:** MIIGPGRGFG KRRHPKCLTP LAYKQFIPNV AEKTLGASGR YEGKISRNSE  
RFKELTPNYN PDIIFKDEEN TGADRLMTQR CKDKLNALAI SVMNQWPGVK LRVTEGWDED GHHSEESLHY  
EGRALDITTS DRDRSKYGML ARLAVEAGFD WVYYESKAHI HCSVKAENSV AAKSGGCFP

**Biological Activity:** Measured by the dose-dependent induction of alkaline phosphatase production by C3H/10T1/2 (CCL-226) fibroblasts and is 1.47ug/ml corresponding to a specific activity of 680U/mg.

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<i>small</i>	5 µg	Cat.N°	11344070
<i>medium</i>	25 µg	Cat.N°	11344074

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