

## Recombinant Mouse Sonic HedgeHog (rm SHH)

**Synonyms:** HHG-1, HHG1.

**Introduction:** Recombinant mouse 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 mouse Sonic Hedgehog is 99% homologous to the human 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 mouse Sonic Hedgehog produced produced in E.Coli is a single, non-glycosylated polypeptide chain containing 176 amino acids and having a molecular mass of 19.8 kDa. The mouse Sonic Hedgehog is 99% homologous to the human gene. Cysteine at position 25 has been substituted with Ile. The Sonic Hedgehog is purified by proprietary chromatographic techniques

**Source:** *Escherichia Coli*

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

**Formulation:** Lyophilized from a concentrated (1mg/ml) solution in water containing 10mM sodium phosphate pH-7.5.

The sample size of 1µg contains Trehalose 5% (w/vol) for better recovery

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

**Stability:** Lyophilized rm SHH although stable at room temperature for 3 weeks, should be stored desiccated below -18° C. Upon reconstitution rm 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 SDS-PAGE.

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

**Biological Activity:** Determined by it's ability to induce alkaline phosphatase production by C3H10T1/2 (CCL-226) fibroblasts and is typically 0.48 - 0.72 µg/ml.

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<i>small</i>	5 µg	Cat.N°	12344070
<i>medium</i>	25 µg	Cat.N°	12344074

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Gladiolenweg 2; 26169 Friesoythe; Germany  
 phone:+49-(0)4491-400997, fax:+49-(0)4491-400998, [info@immunotools.com](mailto:info@immunotools.com)  
[www.immunotools.com](http://www.immunotools.com)