

Product Information

Sonic Hedgehog Peptide, mouse recombinant, expressed in *E. coli*

Catalog Number **S0191**

Storage Temperature $-20\text{ }^{\circ}\text{C}$

Synonyms: Shh, Shh-N

Product Description

The Sonic Hedgehog Peptide (Shh) is known to be an important cell signaling molecule expressed during embryonic development. Shh has been shown to be involved in the patterning of the developing embryonic nervous system, somite, and limbs. Particularly, the protein is expressed in such key embryonic tissues as the Hensen's node, the zone of polarizing activity in the posterior limb bud, the notochord, and the floor plate of the neural tube.

At the cell surface, Shh is regulated by the receptor Patched (PTCH), a multi-pass transmembrane protein. Downstream targets of Shh include the transcription factors Gli3, responsible for Greigs polycephalo-syndactyly in humans, and Hoxd13, responsible for polysyndactyly.^{2,4}

This recombinant product includes amino acid residues 25–198 of mouse Shh¹ fused to a 6× histidine tag at the carboxy-terminus. It is expressed in *E. coli* and has an apparent molecular mass of 20 kDa.

Recombinant Sonic Hedgehog Peptide is lyophilized from a 0.2 μm filtered solution of phosphate buffered saline (PBS), pH 7.4, containing 5% trehalose and 50 μg of bovine serum albumin per 1 μg of cytokine.

Shh activity is measured by its ability to induce alkaline phosphatase production by C3H10Y1/2 fibroblasts.⁵

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute with a sterile water or PBS solution containing at least 0.1% human serum albumin or bovine serum albumin to prepare a stock solution of $\geq 50\text{ }\mu\text{g/ml}$.

Storage/Stability

Store the product at $-20\text{ }^{\circ}\text{C}$. The lyophilized product may be stored at $2\text{--}8\text{ }^{\circ}\text{C}$ for up to 4 weeks without noticeable loss of activity.

Stock solutions should be stored at $-20\text{ }^{\circ}\text{C}$. Avoid repeated freeze-thaw cycles.

References

1. Echelard, Y. et al., Sonic hedgehog, a member of a family of putative signaling molecules, is implicated in the regulation of CNS polarity. *Cell*, **75**, 1417-1430 (1993).
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3. Weed, M. et al., The role of sonic hedgehog in vertebrate development. *Matrix Biol.*, **16**, 53-58 (1997).
4. Carpenter, D. et al., Characterization of two patched receptors for the vertebrate hedgehog protein family. *Proc. Natl. Acad. Sci.*, **95**, 13630-13634 (1998)
5. Nakamura, T. et al., Induction of osteogenic differentiation by hedgehog proteins. *Biochem. Biophys. Res. Commun.*, **237**, 465-469 (1997).

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