



Product Information

Sonic Hedgehog Peptide Mouse Recombinant Expressed in *E. coli*

Product Number **S 0191**
Synonym: Shh; Shh-N

Storage Temperature -20°C

Product Description

Sonic Hedgehog (Shh) Peptide includes the amino acid residues 25-198 of mouse Shh¹ fused to a 6X histidine tag at the carboxy-terminus. The Shh Peptide is a recombinant, expressed in *E. coli* with an apparent molecular mass of 20 kDa.

Shh protein 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 limb. Particularly, the protein is expressed in such key embryonic tissues such 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

Reagent

This product is supplied as a powder 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.

Purity: minimum 97% (SDS-PAGE)

Precautions and Disclaimer

This product is for laboratory use only. Please consult the Material Data Safety Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute with a sterile PBS solution containing at least 0.1% human serum albumin or bovine serum albumin to prepare a stock solution of no less than 50 $\mu\text{g}/\text{ml}$

Storage/Stability

The product ships on dry ice and it is recommended to store the product at -20°C or below. The lyophilized product is stable for a minimum of six months when stored at less than -20°C . Stock solutions may be stored at $2-8^{\circ}\text{C}$ for up to one month before a detectable loss in activity. Avoid repeated freeze-thaw cycles.

Product Profile

Shh activity is measured by its ability to induce alkaline phosphatase production by C3H10Y1/2 fibroblasts.⁵ The ED₅₀ for this production is typically 2-10 $\mu\text{g}/\text{ml}$

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).
2. Perrimon, N., Hedgehog and beyond. *Cell*, **80**, 517-520 (1995).
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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