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## Human Sonic Hedgehog (SHH) Recombinant Protein

**Catalog Number:** 14-8679

**RUO: For Research Use Only. Not for use in diagnostic procedures.**

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### Product Information

**Contents:** Human Sonic Hedgehog (SHH) Recombinant Protein

**REF** **Catalog Number:** 14-8679

**Concentration:** 0.1 mg/mL

**Handling Conditions:** For best recovery, quick-spin vial prior to opening. Use in a sterile environment

**Source:** E. coli derived Gly25-Gly197, accession number NP\_00184

**Molecular Mass:** 19.7 kDa

**Purity:** > 98%, as determined by SDS-PAGE

**Endotoxin:** Less than 0.01 ng/ug cytokine as determined by the LAL assay

**Bioactivity:** The ED50 of this protein, as determined by alkaline phosphatase induction in C3H/10T1/2 fibroblasts, is 760 ng/mL. This corresponds to a specific activity of 1 x 10<sup>3</sup> Units/mg.



**LOT**



**Formulation:** Sterile liquid; phosphate buffered saline with 1% BSA, pH 7.2. 0.22 um filtered.

**Temperature Limitation:** Store at less than or equal to -70°C.

**Batch Code:** Refer to vial

**Use By:** Refer to vial

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### Description

Sonic Hedgehog (SHH) is a highly conserved protein that plays an important role in embryonic development. It is expressed in neural tissue, the gut, and areas of limb development and promotes differentiation and growth in a tissue-specific manner. SHH is synthesized as a 45-kDa precursor protein, which is then cleaved to generate the active 19-kDa N-terminus. SHH interacts with the Patched and Smoothed transmembrane receptors, leading to the activation of GLI family transcription factors. Disruption of any part of this pathway during embryogenesis is associated with birth defects ranging from mild to severe. In adults, abnormal activation of the SHH pathway has been implicated in several forms of cancer.

### Applications Reported

Recombinant human Shh is biologically active.

### Applications Tested

The ED<sub>50</sub> of this protein, as determined by alkaline phosphatase induction in C3H/10T1/2 fibroblasts, is 760 ng/ml. This corresponds to a specific activity of 1 x 10<sup>3</sup> Units/mg.

### References

Amankulor NM, Hambarzumvan D, Pivonick SM, Becher OJ, Joyce JA, Holland EC. Sonic hedgehog pathway activation is induced by acute brain injury and regulated by injury-related inflammation. *J Neurosci.* 2009 Aug 19; 29(33): 10299-308

Villavicencio EH, Walterhouse DO, Iannaccone PM. The sonic hedgehog-patched-gli pathway in human development and disease. *Am J Hum Genet.* 2000 Nov; 67(5): 1047-54.

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