

## Active Sonic Hedgehog, human recombinant (H-SHH)

<b>CATALOG NO:</b>	4010-25	25 µg
	4010-100	100 µg
	4010-1000	1 mg
<b>SOURCE:</b>	<i>E. coli</i>	
<b>PURITY:</b>	> 97% by SDS-PAGE and HPLC analyses Endotoxin level is < 0.01 EU per µg rh-SHH	
<b>MOLECULAR WT:</b>	19.697 kDa	
<b>FORM:</b>	Lyophilized from a 10 mM sodium phosphate buffer (pH 7.3)	

**RECONSTITUTION:** Centrifuge vial before opening. When reconstituting the product, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. It is recommended to reconstitute the lyophilized product with sterile water to a concentration of 0.1-0.5 mg/ml, which can be further diluted into other aqueous solutions.

**STORAGE CONDITIONS:** The lyophilized human Sonic Hedgehog is very stable at -20 °C. Upon reconstitution the material should be aliquoted and frozen at -20 °C. It is recommended to add a carrier protein (0.1% HSA or BSA) for long term storage.

**DESCRIPTION:** Recombinant Human 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. Three mammalian hedgehog genes (sonic, desert, Indian) share about 60% homology. The Cys at position 25 has been substituted with Ile. Human SHH is a non-glycosylated polypeptide consisting of 175 amino acids with a molecular weight of 19,697 Da.

**FOR RESEARCH USE ONLY! Not to be used on humans.**

**BIOLOGICAL ACTIVITY:** Human recombinant Sonic Hedgehog is biologically active as compared to a standard. The ED<sub>50</sub>, measured by the dose-dependent induction of alkaline phosphatase production by C3H/10T1/2 fibroblasts, is 750ng/ml.

**AMINO ACID SEQUENCE:** IIGPGRGFG KRRHPKLLTP LAYKQFIPNV AEKTLGASGR YEGKISRNSE RFKELTPNYN PDIIKDEEN TGADRLMTQR CKDKLNALAI SVMNQWPGVK LRVTEGWDED GHHSEESLHY EGRALDITTS DRDRSKYGML ARLAVEAGFD WVVYESKAHI HCSVKAENSV AAKSGG

### RELATED PRODUCTS:

- Sonic Hedgehog (SHH), human recombinant (Cat No. 7883-25, -100, -1000)
- Active Sonic Hedgehog (SHH), murine recombinant (Cat No. 4020-25, -100, -1000)
- Sonic Hedgehog (SHH), murine recombinant (Cat No. 7884-25, -100, -1000)
- Human CellExp™ SHH, human recombinant (Cat No. 7223-10)