

## Recombinant Human SHH Protein

Cat. No. SHH-527H    Lot. No. (See product label)

### SPECIFICATION

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| Product Overview | Recombinant human SHH protein                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Species          | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| ProteinLength    | 462                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Description      | <p>This gene encodes a protein that is instrumental in patterning the early embryo. It has been implicated as the key inductive signal in patterning of the ventral neural tube, the anterior-posterior limb axis, and the ventral somites. Of three human proteins showing sequence and functional similarity to the sonic hedgehog protein of <i>Drosophila</i>, this protein is the most similar. The protein is made as a precursor that is autocatalytically cleaved; the N-terminal portion is soluble and contains the signalling activity while the C-terminal portion is involved in precursor processing. More importantly, the C-terminal product covalently attaches a cholesterol moiety to the N-terminal product, restricting the N-terminal product to the cell surface and preventing it from freely diffusing throughout the developing embryo. Defects in this protein or in its signalling pathway are a cause of holoprosencephaly (HPE), a disorder in which the developing forebrain fails to correctly separate into right and left hemispheres. HPE is manifested by facial deformities. It is also thought that mutations in this gene or in its signalling pathway may be responsible for VACTERL syndrome, which is characterized by vertebral defects, anal atresia, tracheoesophageal fistula with esophageal atresia, radial and renal dysplasia, cardiac anomalies, and limb abnormalities. Additionally, mutations in a long range enhancer located approximately 1 megabase upstream of this gene disrupt limb patterning and can result in preaxial</p> |

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|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | polydactyly.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Form</b>           | Lyophilized                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>AA Sequence</b>    | MLLLARCLLLVLVSSLLVCSGLACGPGRGFGKRRHPKCLTPLAYKQFIPNVAEKTG<br>ASGRYEGKISRNSERFKELTPNYNPDIIFKDEENTGADRLMTQRCKDKLNALASVM<br>NQWPGVKLRVTEGWDEEDGHHSEESLHYEGRAVDITTSRDRSKYGMLARLAVEAG<br>FDWVYYESKAHIHCSVKAENSVAAKSGGCFPGSATVHLEQGGTKLVKDLSPGDRVL<br>AADDQGRLLYSDFLTFLDRDDGAKKVFIYIETREPRERLLTAAHLLFVAPHNDSAT<br>GEPEASSGSGPPSGGALGPRALFASRVPGQRVYVVAERDGDRLLPAAVHSVTL<br>SEEAAGAYAPLTAQGTILINRVLASCYAVIEEHSWAHRAFAPFRLAHALLAALAPART<br>DRGGDSGGGDRGGGGGRVALTAPGAADAPGAGATAGIHWYSQLLYQIGTWLLDS<br>EALHPLGMAVKSS |
| <b>Purity</b>         | > 98%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Applications</b>   | WB; ELISA; FACS; FC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Stability</b>      | This bioreagent is stable at 4 centigrade (short-term) and -70 centigrade(long-term).<br>After reconstitution, sample may be stored at 4 centigrade for 2-7 days and below -18<br>centigrade for future use.                                                                                                                                                                                                                                                                                              |
| <b>Storage</b>        | At -20 centigrade.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Storage Buffer</b> | PBS (pH 7.4-7.5). Sterile-filtered colorless solution.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Reconstitution</b> | Reconstitute in sterile distilled H2O to no less than 100 µg/mL; dilute reconstituted<br>stock further in other aqueous solutions if needed. Please review COA for lot-specific<br>instructions. Final measurements should be determined by the end-user for optimal<br>performance.                                                                                                                                                                                                                      |

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## GENE INFORMATION

|                        |                                                                                                                                                                                                           |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name</b>       | SHH sonic hedgehog [ Homo sapiens (human) ]                                                                                                                                                               |
| <b>Official Symbol</b> | SHH                                                                                                                                                                                                       |
| <b>Synonyms</b>        | SHH; sonic hedgehog; HLP3, HPE3, sonic hedgehog (Drosophila) homolog , sonic hedgehog homolog (Drosophila); sonic hedgehog protein; HHG1; MCOPCB5; SMMCI; TPT; TPTPS; sonic hedgehog homolog; HLP3; HPE3; |
| <b>Gene ID</b>         | 6469                                                                                                                                                                                                      |
| <b>mRNA Refseq</b>     | NM_000193                                                                                                                                                                                                 |
| <b>Protein Refseq</b>  | NP_000184                                                                                                                                                                                                 |
| <b>MIM</b>             | 600725                                                                                                                                                                                                    |
| <b>UniProt ID</b>      | Q15465                                                                                                                                                                                                    |

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