

Recombinant Mouse Sonic hedgehog protein N-product/SHH Protein

Catalog No.: RP01561

Sequence Information

Species **Gene ID**
Mouse 20423

Swiss Prot **Tags**
Q62226 C-His

Synonyms

9530036O11Rik, Dsh, Hhg1, Hx, Hxl3, M100081,SHH

Product Information

Source **Purification**
HEK293 cells ≥ 95 % as determined by SDS-PAGE.

Calculated MW **Observed MW**
20.49 kDa 24 kDa

Endotoxin

< 0.1 EU/μg of the protein by LAL method.

Formulation

Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.

Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1–0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

Background

This protein 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 Drosophila, 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.

Basic Information

Description

Recombinant Mouse Sonic hedgehog protein N-product/SHH Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Ala24–Gly198) of mouse Sonic hedgehog protein N-product /SHH (Accession #NP_033196.1) fused with a 6×His tag at the C-terminus.

Activity

Measured by its ability to induce alkaline phosphatase production by C3H10T1/2 mouse embryonic fibroblast cells. The ED50 for this effect is typically 0.154–0.616 μg/mL, corresponding to a specific activity of 1.6×10³–6.5×10³ units/mg.

Shipping

Lyophilized proteins are shipped at ambient temperature. Liquid proteins are shipped at frozen temperature with dry ice. Upon receipt, store it immediately at the temperature recommended below.

Storage

Store at –20°C

Operational Notes

For your safety and health, please wear a lab coat and disposable gloves for handling.

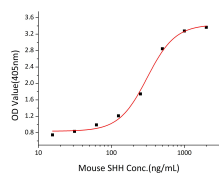
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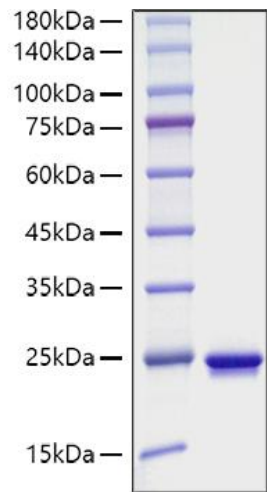
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Validation Data



Measured by its ability to induce alkaline phosphatase production by C3H10T1/2 mouse embryonic fibroblast cells. The ED₅₀ for this effect is typically 0.154-0.616 µg /mL, corresponding to a specific activity of 1.6×10³~6.5×10³ units/mg.



Recombinant Mouse Sonic hedgehog protein N-product/SHH Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.