Data Sheet (Cat.No.TMPY-03345)

TargetMol

SHH Protein, Mouse, Recombinant (His)

General Information

Synonyms:	Hhg1;Hxl3;9530036O11Rik;Dsh;Hx;sonic hedgehog;M100081
Protein Construction:	A DNA sequence encoding the mouse SHH (Q62226) (Met1-Gly198) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Cys 25
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	Q62226
Molecular Weight:	21 kDa (predicted); 23 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to induce alkaline phosphatase production by C3H10T1/2 mouse embryonic fibroblast cells. Nakamura, T. et al. (1997) Biochem. Biophys. Res. Commun.237: 465. The ED50 for this effect is typically 5-40 μg/mL.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.2 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Sonic HedgeHog, also known as sonic hedgehog protein, belongs to the hedgehog family. It cannot be detected in adult tissues while can be found in fetal intestine, liver, lung, and kidney. Sonic HedgeHog is a protein that is vital in guiding the early embryo. It has been associated as the major inductive signal in patterning of the ventral neural tube, the anterior-posterior limb axis, and the ventral somites. Sonic HedgeHog intercellular signal is essential for a various patterning events during development: signal produced by the notochord that induces ventral cell fate in the neural tube and somites, and the polarizing signal for patterning of the anterior-posterior axis of the developing limb bud. Sonic HedgeHog binds to the patched receptor, which functions in association with smoothened, to activate the transcription of target genes. In the absence of sonic HedgeHog, patched receptor represses the constitutive signaling activity of smoothened. Sonic HedgeHog also regulates another factor, the gli oncogene. Defects in sonic hedgehog can cause microphthalmia isolated with coloboma type 5, triphalangeal thumb-polysyndactyly syndrome and holoprosencephaly type 3.

Reference

Ericson J, et al. (1997) Graded sonic hedgehog signaling and the specification of cell fate in the ventral neural tube. Cold Spring Harb Symp Quant Biol. 62:451-66.

Marigo V, et al. (1996) Regulation of patched by sonic hedgehog in the developing neural tube. Proc Natl Acad Sci. 93(18):9346-51.

Stone DM, et al. (1996) he tumour-suppressor gene patched encodes a candidate receptor for Sonic hedgehog. Nature. 384:129-34.

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