



## Synonym

SHH,HHG-1,Sonic hedgehog,HLP3,HPE3,SMMCI,TPT,TPTPS

## Source

Human Sonic Hedgehog, His Tag, premium grade(SH7-H5229) is expressed from human 293 cells (HEK293). It contains AA Cys 24 - Gly 197 (Accession # [NP\\_000184](#)).

Predicted N-terminus: Cys 24

*It is produced under our rigorous quality control system that incorporates a comprehensive set of tests including sterility and endotoxin tests. Product performance is carefully validated and tested for compatibility for cell culture use or any other applications in the early preclinical stage. When ready to transition into later clinical phases, we also offer a custom GMP protein service that tailors to your needs. We will work with you to customize and develop a GMP-grade product in accordance with your requests that also meets the requirements for raw and ancillary materials use in cell manufacturing of cell-based therapies.*

## Molecular Characterization

Sonic Hedgehog(Cys 24 - Gly 197)  
NP\_000184 Poly-his

This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 20.4 kDa. The protein migrates as 23-25 kDa when calibrated against [Star Ribbon Pre-stained Protein Marker](#) under reducing (R) condition (SDS-PAGE) due to glycosylation.

## Endotoxin

Less than 0.2 EU per µg by the LAL method.

## Sterility

Negative

## Mycoplasma

Negative.

## Purity

>90% as determined by SDS-PAGE.

## Formulation

Lyophilized from 0.22 µm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

## Reconstitution

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

## Storage

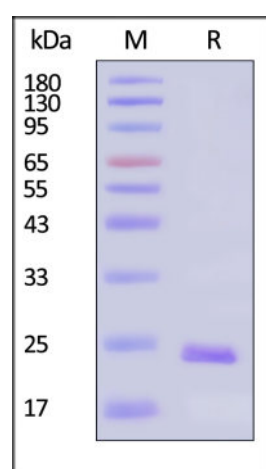
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

## SDS-PAGE

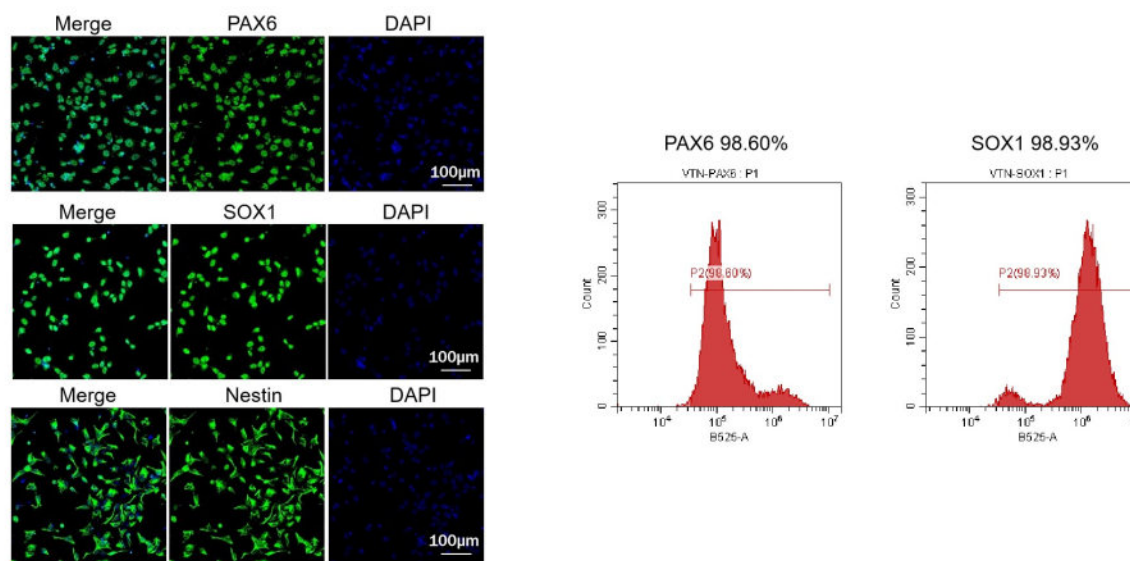


Human Sonic Hedgehog, His Tag, premium grade on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90% (With [Star Ribbon Pre-stained Protein Marker](#)).

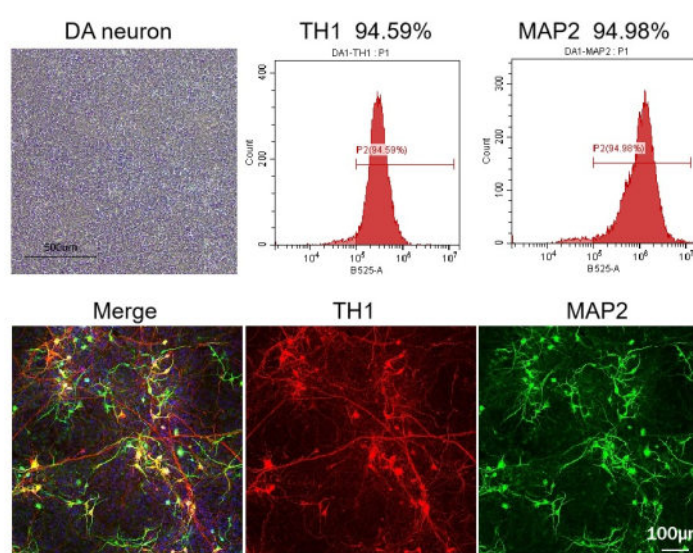
## Application Data

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and more!





Human Sonic Hedgehog, His Tag, premium grade (Cat. No. SH7-H5229) and Human Noggin Protein, premium grade (Cat. No. NON-H5219) could efficiently induce the iPS cell into neuron progenitor cell differentiation, highly expressed PAX6, SOX1 and Nestin in immunofluorescence staining and FACS (Routinely tested).



GMP Human FGF-8b Protein (Cat. No. GMP-FGBH16) and Human Sonic Hedgehog, His Tag, premium grade (Cat. No. SH7-H5229) could efficiently induce the neuron progenitor cell into dopaminergic neurons differentiation, highly expressed TH1 and MAP2 in immunofluorescence staining and FACS (Routinely tested).

## Background

Sonic hedgehog protein (SHH) is also known as HHG-1, which belongs to the hedgehog family. SHH is expressed in fetal intestine, liver, lung, and kidney and not expressed in adult tissues. Sonic hedgehog protein can be cleavage into sonic hedgehog protein N-product and sonic hedgehog protein C-product by autolysis. SHH binds to the patched (PTC) receptor, which functions in association with smoothened (SMO), to activate the transcription of target genes. In the absence of SHH, PTC represses the constitutive signaling activity of SMO. Also regulates another target, the gli oncogene. Intercellular signal essential for a variety of patterning events during development. The C-terminal domain displays an autoproteolysis activity and a cholesterol transferase activity. The N-product is the active species in both local and long-range signaling, whereas the C-product has no signaling activity.

## Clinical and Translational Updates

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