

# Recombinant Rat Sonic hedgehog N-product/SHH Protein

Catalog No.: RP01896 **Recombinant**

## Sequence Information

**Species**    **Gene ID**    **Swiss Prot**  
 Rat            29499            Q63673

### Tags

C-His

### Synonyms

Shh; Vhh-1; Sonic hedgehog protein; SHH; 3.1.-.; Shh unprocessed N-terminal signaling and C-terminal autoprocessing domains; ShhNC; Cleaved into: Sonic hedgehog protein N-product; ShhN; Shh N-terminal processed signaling domains; ShhNp

## Background

Sonic Hedgehog Protein (SHH, VHH-1) belongs to hedgehog protein family which includes Indian Hh, and Desert Hh. Hh family is involved in the cell fate and patterning during embryonic development, homeostasis, and adult tissue renewal. Similar to other member in the family, SHH binds to the patched (PTC) cell surface receptor, releasing the signal transducer Smoothened (Smo) to transmit the Hh signal into the cell and activate transcription of the target gene. Precursor SHH is autocatytically cleaved into two subunits, N-terminal and C-terminal products. Soluble N-terminal product is involved in the signaling activity, while C-product displays an autoproteolysis activity on the precursor and a cholesterol transferase activity on the N-terminal product. C-terminal product attaches a cholesterol moiety to the N-terminal product, preventing N-terminal product diffusion within the developing embryo. A defect in SHH has been linked in holoprosencephaly type 3 (HPE3), in which developing forebrain fails to separate into right and left hemispheres, and ocular coloboma.

## Product Information

<b>Source</b>	<b>Purification</b>
HEK293 cells	≥ 90% as determined by SDS-PAGE.

<b>Calculated MW</b>	<b>Observed MW</b>
20.53 kDa	20-25 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.

## Basic Information

### Description

Recombinant Rat Sonic hedgehog N-product/SHH Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Ala24-Gly198) of Rat Sonic hedgehog /SHH (Accession #NP\_058917.1) fused with a His tag at the C-terminus.

### Bio-Activity

### Shipping

The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

### Storage

Store at -20°C. Store the lyophilized protein at -20°C to -80 °C up to 1 year from the date of receipt.

After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week.

Avoid repeated freeze/thaw cycles.

### Operational Notes

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

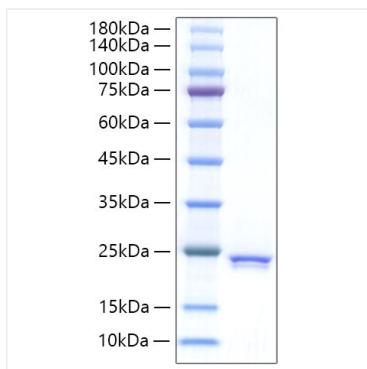
## Contact

	400-999-6126
	<a href="mailto:cn.market@abclonal.com.cn">cn.market@abclonal.com.cn</a>



## Validation Data

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