# **Recombinant Human HHG-3/DHH Protein**

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Catalog No.: RP01758 Recombinant

## **Sequence Information**

Species Gene ID Swiss Prot Human 50846 043323

Tags N-6His

**Synonyms** GDMN; GDXYM; HHG-3; SRXY7:HHG-3:DHH

## **Product Information**

Source Purification

E. coli ≥ 95 % as
determined by SDS-

determined by SDS PAGE.

Calculated MW Observed MW

20.57 kDa 24-25 kDa

#### **Endotoxin**

< 1 EU/µg of the protein by LAL method.

#### **Formulation**

Lyophilized from a 0.22 µm filtered solution of PBS,1mM DTT, 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 stablizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

#### Contact

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## **Background**

Desert Hedgehog (Dhh) belongs to the highly conserved Hedgehog family of proteins which are involved in multiple developmental processes. Desert Hedgehog is a secreted, 45 kDa, 373 amino acid (aa) protein that undergoes autocatalytic cleavage between Gly198 and Cys199 catalyzed by the C-terminal domain, which releases the N-terminal domain with a concominant attachment of cholesterol at its new Cterminus. In addition to the C-terminally attached cholesterol, a fatty acid acyl chain is esterified to the N-terminal cysteine (aa 23) via an amide linkage. The 19 kDa Nterminal signaling domain is membrane associated due to its double lipid modifications. Its binding to Patched receptors results in the loss of Patched repression of Smoothened signaling (1 - 4). Dhh binds both Patched and Patched 2 as well as Hedgehog interacting protein (Hip) (5). Within the N-terminal domain, human Dhh shares 97% aa sequence identity with mouse and rat Dhh. It shares approximately 75% aa sequence identity with human Indian (Ihh) and Sonic Hedgehog (Shh) (5). Dhh is produced by Sertoli cells and is required for testis development and spermatogenesis (6, 7). It induces steroidogenic factor 1, which is instrumental in promoting Leydig cell differentiation (8, 9).

## **Basic Information**

#### **Description**

Recombinant Human HHG-3/DHH Protein is produced by  $E.\ coli$  expression system. The target protein is expressed with sequence (Cys23-Gly198) of human HHG-3/DHH (Accession #NP\_066382.1) fused with a 6×His tag at the N-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.

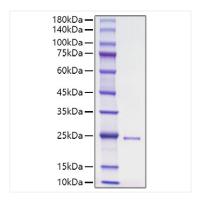
After reconstitution, the protein solution is stable at -20  $^{\circ}$ C for 3 months, at 2-8  $^{\circ}$ C for up to 1 week.

Avoid repeated freeze/thaw cycles.

## **Operational Notes**

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

## **Validation Data**



Recombinant Human HHG-3/DHH Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.