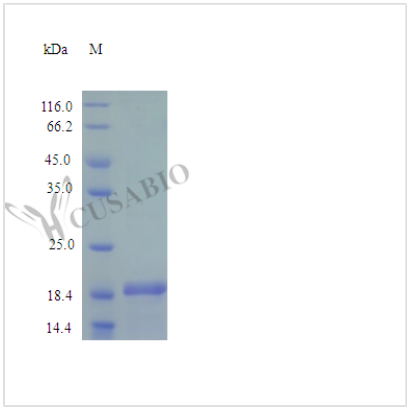
Recombinant Human Desert hedgehog protein (DHH), partial (Active)

Product Code	CSB-AP000411HU
Abbreviation	Recombinant Human DHH protein, partial (Active)
Uniprot No.	O43323
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered 10mM PB, pH 6.0, 300mM NaCl
Product Type	Other
Immunogen Species	Homo sapiens (Human)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by its ability to induce alkaline phosphatase production by C3H10T1/2(CCL-226) cells is 15-45 μg/ml.
Purity	>96% as determined by SDS-PAGE.
Sequence	II+GPGRGPVG RRRYARKQLV PLLYKQFVPG VPERTLGASG PAEGRVARGS ERFRDLVPNY NPDIIFKDEE NSGADRLMTE RCKERVNALA IAVMNMWPGV RLRVTEGWDE DGHHAQDSLH YEGRALDITT SDRDRNKYGL LARLAVEAGF DWVYYESRNH VHVSVKADNS LAVRAGG
Research Area	Stem Cells?
Source	E.coli
Target Names	DHH
Expression Region	24-198aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	Tag-Free
Mol. Weight	19.9 kDa
Protein Length	Partial
PubMed ID	15489334; 11017805; 19561611; 20519495; 15356051
Image	



Description

Desert hedgehog protein (DHH) is a crucial signaling molecule involved in various developmental processes and disease conditions. DHH, along with its receptor Patched (PTCH1), regulates the proper development of myoid cells in the peritubular region and fetal Leydig cells in the interstitial region [1]. It is also associated with the progression of stomach adenocarcinoma by regulating the Hedgehog signaling pathway [2]. Furthermore, DHH plays a significant role in specifying fetal Leydig cell fate in testis organogenesis and the differentiation of peritubular myoid cells, thereby contributing to the formation of testis cords [3]. Additionally, DHH is essential for the formation of adult-type Leydig cells and the normal development of peritubular cells and seminiferous tubules in the mouse testis [4].

Moreover, DHH is implicated in genetic disorders such as 46,XY complete pure gonadal dysgenesis and minifascicular neuropathy [5][6]. It is also known to be a negative regulator of CD44-CD25+ double negative T lymphocytes developmental stage in thymic differentiation [7]. Furthermore, DHH has been linked to autism spectrum disorder, as its serum levels have been preliminarily associated with this condition [8].

In terms of its molecular characteristics, DHH is one of the three highly conserved hedgehog genes in mammals, along with Sonic hedgehog (SHH) and Indian hedgehog (IHH) [9]. These hedgehog proteins are capable of binding to PTCH1, leading to signal transduction via derepression of the co-receptor, SMO [10]. Additionally, DHH proteins function in cell-cell contact-mediated juxtacrine signaling, unlike SHH, which highlights its distinct mechanisms of action [10].

References:

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Endotoxin	Less than 1.0 EU/μg as determined by LAL method.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.