DHH Protein, Human

Cat. No.:	HY-P700605
Synonyms:	rHuDHH; DHH; HHG-3
Species:	Human
Source:	E. coli
Accession:	O43323 (G24-G198)
Gene ID:	50846
Molecular Weight:	Approximately 20 kDa

PROPERTIES

AA Sequence	G P G R G P V G R R R Y A R K Q L V P L L Y K Q F V P G V P E R T L G A S G P A E G R V A R G S E R F R D L V P N Y N P D I I F K D E E N S G A D R L M T E R C K E R V N A L A I A V M N M W P G V R L R V T E G W D E D G H H A Q D S L H Y E G R A L D I T T S D R D R N K Y G L L A R L A V E A G F D W V Y Y E S R N H V H V S V K A D N S L A V R A G G
Biological Activity	Measured by its ability to induce alkaline phosphatase production by C3H10T1/2 mouse embryonic fibroblast cells. The ED_{50} for this effect is 1.729 μg/mL, corresponding to a specific activity is 5.817×10^2 U/mg.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The DHH protein precursor exhibits autoproteolysis and cholesterol transferase activity in its C-terminal region, leading to the cleavage of the full-length protein into N-product and C-product fragments, with the addition of a cholesterol moiety to the newly generated N-product. These processes occur in the endoplasmic reticulum. DHH plays a crucial role in cell-cell-mediated juxtacrine signaling and promotes endothelial integrity. It binds to the PTCH1 receptor, in association with SMO,

activating the transcription of target genes in endothelial cells. In Schwann cells, DHH controls the development of the peripheral nerve sheath and the transition of mesenchymal cells into the perineurial tube's epithelium-like structure. The lipidated DHH N-product is vital for various developmental patterning events, binding to PTCH1 and activating target gene transcription. DHH is essential for normal testis development, spermatogenesis, and the formation of adult-type Leydig cells, as well as the development of peritubular cells and seminiferous tubules. Additionally, DHH activates primary cilia signaling in neighboring valve interstitial cells through paracrine mechanisms and may induce motor neurons in the lateral neural tube while preventing binding of the DHH protein precursor to PTCH1.

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