

## UGCG Protein, Human (Cell-Free, His)

<b>Cat. No.:</b>	HY-P702485
<b>Synonyms:</b>	Ceramide glucosyltransferase; GLCT-1; Glucosylceramide synthase; GCS; Glycosylceramide synthase; UDP-glucose ceramide glucosyltransferase; UDP-glucose:N-acylsphingosine D-glucosyltransferase
<b>Species:</b>	Human
<b>Source:</b>	E. coli Cell-free
<b>Accession:</b>	Q16739 (M1-V394)
<b>Gene ID:</b>	7357
<b>Molecular Weight:</b>	47.7 kDa

### PROPERTIES

<b>AA Sequence</b>	<pre> M A L L D L A L E G   M A V F G F V L F L   V L W L M H F M A I   I Y T R L H L N K K A T D K Q P Y S K L   P G V S L L K P L K   G V D P N L I N N L   E T F F E L D Y P K Y E V L L C V Q D H   D D P A I D V C K K   L L G K Y P N V D A   R L F I G G K K V G I N P K I N N L M P   G Y E V A K Y D L I   W I C D S G I R V I   P D T L T D M V N Q M T E K V G L V H G   L P Y V A D R Q G F   A A T L E Q V Y F G   T S H P R Y Y I S A N V T G F K C V T G   M S C L M R K D V L   D Q A G G L I A F A   Q Y I A E D Y F M A K A I A D R G W R F   A M S T Q V A M Q N   S G S Y S I S Q F Q   S R M I R W T K L R I N M L P A T I I C   E P I S E C F V A S   L I I G W A A H H V   F R W D I M V F F M C H C L A W F I F D   Y I Q L R G V Q G G   T L C F S K L D Y A   V A W F I R E S M T I Y I F L S A L W D   P T I S W R T G R Y   R L R C G G T A E E   I L D V </pre>
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.22 µm filtered solution of Tris/PBS-based buffer, 6% Trehalose, pH 8.0.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add 5-50% of glycerol (final concentration). Our default final concentration of glycerol is 50%. Customers could use it as reference.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

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**Background**

UGCG Protein serves a pivotal role in the glucosylceramide-based glycosphingolipid (GSL) synthetic pathway at the cytosolic surface of the Golgi. This enzyme catalyzes the essential initial step by transferring glucose from UDP-glucose to ceramide, yielding glucosylceramide (GlcCer), a fundamental component of GSLs. GSLs, amphipathic molecules residing in the outer leaflet of membranes, play integral roles in membrane microdomains, influencing processes like membrane trafficking and signal transduction. UGCG's contribution extends to critical cellular functions such as growth, differentiation, migration, and morphogenesis, with specific implications in nervous system development. Notably, GSLs, including GlcCer, modulate the leptin receptor/LEPR in the leptin-mediated signaling pathway and are indispensable for establishing the skin barrier, regulating keratinocyte differentiation, and assembling the cornified envelope. Furthermore, UGCG facilitates the synthesis of xylosylceramide (XylCer), showcasing its versatility in glycosphingolipid biosynthesis by utilizing UDP-Xyl as a xylose donor. This multifaceted enzymatic activity underscores UGCG's central role in diverse cellular processes and highlights its significance in maintaining cellular homeostasis and functionality.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA