

## GBA/Glucosylceramidase Protein, Human (HEK293, His)

Cat. No.:	HY-P75786
Synonyms:	Lysosomal acid glucosylceramidase; Alglucerase; Beta-GC; SGTase; GC; GLUC
Species:	Human
Source:	HEK293
Accession:	P04062/NP_000148.2 (A40-Q536)
Gene ID:	2629
Molecular Weight:	60-70 kDa

### PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 $\mu$ m filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/ $\mu$ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O.
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

GBA (Glucosylceramidase) is a crucial enzyme located within the lysosomal compartment, playing a central role in the degradation of complex lipids and cellular membrane turnover. It catalyzes the hydrolysis of glucosylceramides (GlcCers), such as beta-D-glucosyl-(1 $\leftrightarrow$ 1')-N-acylsphing-4-ene, into free ceramides and glucose. This enzymatic activity is essential for the PKC-activated salvage pathway of ceramide formation. Additionally, GBA participates in a transglucosylation reaction, transferring glucose from GlcCer to cholesterol, a process preferred with GlcCers containing mono-unsaturated fatty acids. Under specific conditions, GBA may catalyze the reverse reaction, transferring glucose from cholesteryl 3-beta-D-glucoside to ceramide. Furthermore, GBA can hydrolyze cholesteryl 3-beta-D-glucoside, yielding glucose and cholesterol. While GBA exhibits lower activity with galactosylceramides (GalCers), it can also transfer galactose between GalCers and cholesterol in vitro. In contrast, xylosylceramide (XylCer) is not a significant substrate for hydrolysis, but it serves as a good xylose donor for transxylosylation activity, forming cholesteryl 3-beta-D-xyloside.

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

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