

GM2A Protein, Human, Recombinant (His)

General Information

Synonyms:	GM2 ganglioside activator;SAP-3;GM2-AP
Protein Construction:	A DNA sequence encoding the human GM2A (AAA35907.1) (Met 1-Ile 193) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Val 22
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	AAA35907.1
Molecular Weight:	19.8 kDa (predicted); 25 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 96 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, 500 mM NaCl, pH 7.4, 10% gly. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:
It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:
In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

GM2A (GM2 ganglioside activator), is a lipid transfer protein which belongs to the ML domain family. GM2A can accommodate several single chain phospholipids and fatty acids. It also exhibits some calcium-independent phospholipase activity. GM2A binds gangliosides and stimulates ganglioside GM2 degradation. It stimulates only the breakdown of ganglioside GM2 and glycolipid GA2 by beta-hexosaminidase A. GM2A acts as a substrate specific co-factor for the lysosomal enzyme β-hexosaminidase A. β-hexosaminidase A, together with GM2

ganglioside activator, catalyzes the degradation of the ganglioside GM2, and other molecules containing terminal N-acetyl hexosamines. It extracts single GM2 molecules from membranes and presents them in soluble form to beta-hexosaminidase A for cleavage of N-acetyl-D-galactosamine and conversion to GM3. Defects in GM2A are the cause of GM2-gangliosidosis type AB (GM2GAB), also known as Tay-Sachs disease AB variant.

Reference

Wright CS, et al. (2003) Structural analysis of lipid complexes of GM2-activator protein. J Mol Biol. 331(4):951-64.

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