GM2A Cell Lysate – Tissue Lysate

PRODUCT OVERVIEW

Product Name	GM2A, Cell Lysate
Full Product Name	Human GM2A Baculovirus-Insect cells Overexpression Lysate
Product Gene Name	GM2A cell lysate
Product Synonym Names	Human GM2A Insect Cell Lysate (WB positive control); GM2 ganglioside activator; Human GM2-AP Overexpression Lysate; Human SAP-3 Overexpression Lysate
Sequence	Met1-Ile19 3
Host	Baculovirus-Insect cells
Form/Format	1x Sample Buffer (1x modified RIPA buffer+1x SDS loading buffer). Modified RIPA Lysis Buffer: 50 mM Tris-HCl pH 7.4, 150 mM NaCl, 1mM EDTA, 1% Triton X-100, 0.1% SDS, 1% Sodium deoxycholate, 1mM PMSF.
Preparation and Storage	Store at 4 degree C for up to twelve months from date of receipt. After re-dissolution, aliquot and store at -80 degree C for up to twelve months. Avoid repeated freeze-thaw cycles. Samples are stable for up to twelve months from date of receipt.
Molecular Weight	20,838 Da
Sequence Positions	180aa
Species	Human
Recommend Usage	1. Centrifuge the tube for a few seconds and ensure the pellet at the bottom of the tube.**2. Re-dissolve the pellet using 200uL pure water and boil for 2-5 min.**
Sequence Construction	A DNA sequence encoding the human GM2A (AAA35907.1) (Met 1-Ile 193) was fused with a polyhistidine tag at the C-terminus.
Preparation Method	Cell lysate was prepared by homogenization of the over-expressed cells in ice-cold modified RIPA Lysis Buffer with cocktail of protease inhibitors. Cell debris was removed by centrifugation. Protein concentration was determined by Bradford assay (protein assay, Microplate Standard assay). The cell lysate was boiled for 5 min in 1 x SDS loading buffer (50mM Tris-HCl pH 6.8, 12.5% glycerol, 1% sodium dodecylsulfate, 0.01% bromophenol blue) containing 5% b-mercaptoethanol, and lyophilized.
Applications Tested/Suitable for GM2A cell lysate	Western Blot (WB)
Application Notes for GM2A cell lysate	WB: Use at an assay dependent dilution.
Related Product Information for GM2A cell lysate	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 beta-hexosaminidase A. beta-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. This Human GM2A overexpression lysate was created in Baculovirus-Insect cells and intented for use as a Western blot (WB) positive control. Purification of GM2A protein from the overexpression lysate was verified.
Product References and Citations for GM2A cell lysate	Wright CS, et al. (2003) Structural analysis of lipid complexes of GM2-activator protein. J Mol Biol. 331(4):951-64.

Other Notes	Small volumes of GM2A cell lysate vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for GM2A purchase	MBS8115100 is a cell lysate targeting GM2A. Also known as Human GM2A Baculovirus-Insect cells Overexpression Lysate. Host: Baculovirus-Insect cells.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for GM2A. It may not necessarily be applicable to this product.

NCBI GI #	183357
NCBI GeneID	2760
NCBI Accession #	AAA35907.1
UniProt Secondary Accession #	Q14426; Q14428; Q6LBL5; B2R699; D3DQH6
UniProt Related Accession #	P17900
NCBI Official Full Name	G-M2 activator protein
NCBI Official Synonym Full Names	GM2 ganglioside activator
NCBI Official Symbol	GM2A
NCBI Official Synonym Symbols	SAP-3; GM2-AP
Protein Family	Ganglioside GM2 activator
NCBI Protein Information	ganglioside GM2 activator
NCBI Summary for GM2A	This gene encodes a small glycolipid transport protein which acts as a substrate specific co-factor for the lysosomal enzyme beta-hexosaminidase A. Beta-hexosaminidase A, together with GM2 ganglioside activator, catalyzes the degradation of the ganglioside GM2, and other molecules containing terminal N-acetyl hexosamines. Mutations in this gene result in GM2-gangliosidosis type AB or the AB variant of Tay-Sachs disease. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Nov 2009]
Research Articles on GM2A	**1.** Studies indicate that sphingolipid activator proteins (SAPs) and anionic lipids are essential stimulators to reach physiological rates of lysosomal sphingolipid degradation.
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