PRODUCT INFORMATION

AcMNPV Major Envelope Glycoprotein (recombinant)

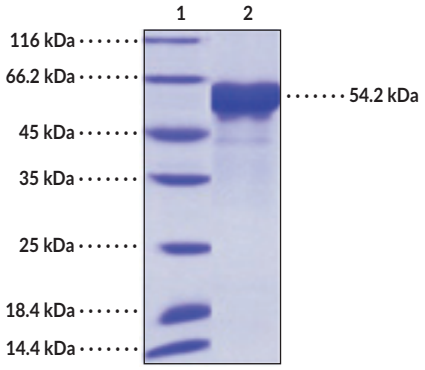
Item No. 37024

Overview and Properties

Synonyms:	AcMNPV GP64, *Autographa californica* Multicapsid Nucleopolyhedrovirus Major Envelope Glycoprotein, *Autographa californica* Multiple Nucleopolyhedrovirus Major Envelope Glycoprotein
Source:	Recombinant AcMNPV (strain E2) C-terminal His-tagged major envelope glycoprotein expressed in insect cells
Amino Acids:	21-481
Uniprot No.:	P17501
Molecular Weight:	54.2 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 20 mM Tris, pH 7.5, 500 mM sodium chloride, and 10% glycerol
Protein Concentration:	***batch specific*** mg/ml
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: AcMNPV Major Envelope Glycoprotein

SDS-PAGE Analysis of AcMNPV Major Envelope Glycoprotein. This protein has a calculated molecular weight of 54.2 kDa.

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

Autographa californica multiple nucleopolyhedrovirus (AcMNPV) major envelope glycoprotein is a class III viral fusion protein.[1] AcMNPV is a double-stranded DNA insect virus and member of the *Baculoviridae* family. AcMNPV major envelope glycoprotein exists as a trimer and is composed of five domains in the low pH, post-fusion state that is highly post-translationally modified *via* glycosylation sites and a palmitoylation site at the C-terminus.[2,3] It is expressed on the surface of infected cells and budded virions.[1] AcMNPV major envelope glycoprotein is involved in viral envelope-host cell endosome membrane fusion in a low pH-dependent manner and in virion budding.[4,5] Lipoplexes containing AcMNPV major envelope glycoprotein have been used for gene delivery to mammalian cells, which can be inhibited by an AcMNPV major envelope glycoprotein neutralizing antibody.[6] Cayman's AcMNPV Major Envelope Glycoprotein protein consists of 472 amino acids, has a calculated molecular weight of 54.2 kDa, and a predicted N-terminus of Ala21 after signal peptide cleavage.

References

1. Yu, Q., Bai, L., Ji, N., *et al.* Critical residues and contacts within domain IV of *Autographa californica* multiple nucleopolyhedrovirus GP64 contribute to its refolding during membrane fusion. *J. Virol.* **94(19)**, e01105-20 (2020).
2. Kadlec, J., Loureiro, S., Abrescia, N.G.A., *et al.* The postfusion structure of baculovirus GP64 supports a unified view of viral fusion machines. *Nat. Struct. Mol. Biol.* **15(10)**, 1024-1030 (2008).
3. Zhang, S.X., Han, Y., and Blissard, G.W. Palmitoylation of the *Autographa californica* multicapsid nucleopolyhedrovirus envelope glycoprotein GP64: Mapping, functional studies, and lipid rafts. *J. Virol.* **77(11)**, 6265-6273 (2003).
4. Hu, L., Li, Y., Ning, Y.-J., *et al.*The major hurdle for effective baculovirus transduction into mammalian cells is passing early endosomes. *J. Virol.* **93(15)**, e00709-19 (2019).
5. Oomens, A.G.P., and Blissard, G.W. Requirement for GP64 to drive efficient budding of *Autographa californica* multicapsid nucleopolyhedrovirus. *Virology* **254(2)**, 297-314 (1999).
6. Guibinga, G.-H., Song, S., Loring, J., *et al.* Characterization of the gene delivery properties of baculoviral-based virosomal vectors. *J. Virol. Methods.* **148(1-2)**, 277-282 (2008).

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