

PRODUCT INFORMATION



MPLA

Item No. 25998

CAS Registry No.: 1246298-63-4

Formal Name: 3-[[[(3R)-3-hydroxytetradecanoate], 2-deoxy-6-O-[2-deoxy-3-O-[(3R)-1-oxo-3-[(1-oxotetradecyl)oxy]tetradecyl]-2-[[[(3R)-1-oxo-3-[(1-oxotetradecyl)oxy]tetradecyl]amino]-4-O-phosphono-β-D-glucopyranosyl]-2-[[[(3R)-3-hydroxy-1-oxotetradecyl]amino]-α-D-glucopyranose, monoammonium salt

Synonyms: Glucopyranosyl Lipid A, Monophosphoryl Lipid A

MF: $C_{96}H_{180}N_2O_{22}P \cdot NH_4$

FW: 1,763.5

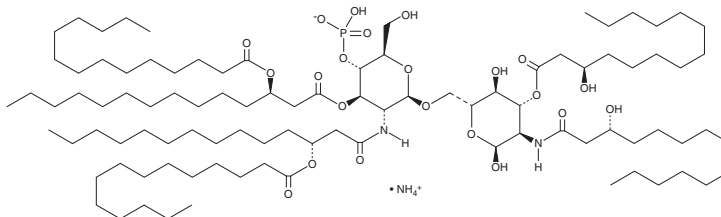
Supplied as: A solution in sterile, double distilled water

Storage: 4°C

Stability: ≥2 years

Special Conditions: Do not freeze

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



Laboratory Procedures

MPLA is supplied as a solution in sterile, double distilled water. To change the solvent, simply evaporate the sterile, double distilled water under a gentle stream of nitrogen and immediately add the solvent of choice. MPLA is soluble in the organic solvent DMSO at a concentration of approximately 1 mg/ml.

Description

MPLA is a synthetic derivative of lipid A, a component of bacterial LPS, that is hexa-acylated in contrast to lipid A monophosphoryl from *S. minnesota* R595 (Item No. 25848), which can be hepta-, hexa-, or penta-acylated.^{1,2} MPLA is an agonist of toll-like receptor 4 (TLR4).² Intramuscular injection of MPLA (5 µg/100 µl) in mice increases injection site transcription of MyD88- and TRIF-dependent genes as well as genes encoding cytokines and cytokine receptors, chemokines, and molecules involved in the complement pathway and antigen presentation.² It also increases the number of CD3⁺ T cells and CD11c⁺ GR1⁺ dendritic cells recruited to draining lymph nodes and increases serum levels of CCL2/MCP-1, CXCL1, CSF3, IL-6, and IL-10 by more than 10-fold compared to control animals. Emulsions containing MPLA have demonstrated efficacy as vaccine adjuvants in several mouse models, enhancing immune responses to HIV gp140 antigen and providing protection against *M. tuberculosis* infection.^{3,4}

References

1. Qureshi, N., Mascagni, P., Ribí, E., et al. *J. Biol. Chem.* **260**(9), 5271-5278 (1985).
2. Lambert, S.L., Yang, C.F., Liu, Z., et al. *PLoS One* **7**(12), e51618 (2012).
3. Arias, M.A., Van Roey, G.A., Tregoning, J.S., et al. *PLoS One* **7**(7), e41144 (2012).
4. Baldwin, S.L., Bertholet, S., Reese, V.A., et al. *J. Immunol.* **188**(5), 2189-2197 (2012).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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