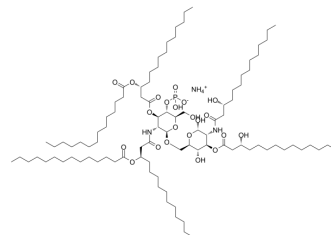


Monophosphoryl lipid A

Cat. No.:	HY-130320
CAS No.:	1246298-63-4
Molecular Formula:	C ₉₆ H ₁₈₄ N ₃ O ₂₂ P
Molecular Weight:	1763.47
Target:	Toll-like Receptor (TLR)
Pathway:	Immunology/Inflammation
Storage:	-20°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 25 mg/mL (14.18 mM); ultrasonic and warming and heat to 60°C																	
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent Concentration</th> <th rowspan="2">Mass</th> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td>1 mM</td> <td>0.5671 mL</td> <td>2.8353 mL</td> <td>5.6706 mL</td> </tr> <tr> <td>5 mM</td> <td>0.1134 mL</td> <td>0.5671 mL</td> <td>1.1341 mL</td> </tr> <tr> <td>10 mM</td> <td>0.0567 mL</td> <td>0.2835 mL</td> <td>0.5671 mL</td> </tr> </tbody> </table>	Solvent Concentration	Mass	1 mg	5 mg	10 mg	1 mM	0.5671 mL	2.8353 mL	5.6706 mL	5 mM	0.1134 mL	0.5671 mL	1.1341 mL	10 mM	0.0567 mL	0.2835 mL	0.5671 mL
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	Please refer to the solubility information to select the appropriate solvent.																	
In Vivo	1. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: 2.5 mg/mL (1.42 mM); Suspended solution; Need ultrasonic																	

BIOLOGICAL ACTIVITY

Description	Monophosphoryl lipid A (Glucopyranosyl lipid A) is a toll-like receptor 4 agonist. Monophosphoryl lipid A is derived from the cell wall of nonpathogenic Salmonella. Monophosphoryl lipid A can be used for the research of immunization and vaccine ^[1] .
IC₅₀ & Target	TLR4
In Vitro	<p>Monophosphoryl lipid A (100 µg/ml, 2 hours; dendritic cells) induces NF-κB activation and modulates TLR2^[2].</p> <p>Monophosphoryl lipid A (5~100 µg/ml, 24 hours; dendritic cells) induces IL-12 production by human^[2].</p> <p>Increasing the amount of Monophosphoryl lipid A (from 0.1 to 1 µg), the percentage of matured BMDCs also increased^[1].</p> <p>Monophosphoryl lipid A up-regulates dendritic cells surface markers. Monophosphoryl lipid A enhances T cell responses.</p> <p>Monophosphoryl lipid A (CD4 T cells) increases calcium mobilization of activated T cells^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis^[2]</p>

	Cell Line:	Dendritic cells
	Concentration:	100 µg/ml
	Incubation Time:	2 hours
	Result:	Induced NF-κB activation and modulated TLR2.
In Vivo	The generated Monophosphoryl lipid A has been shown to activate APC and to enhance the generation of both Th1- and Th2-specific immune response in mice ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

REFERENCES

[1]. Cheng R, et al. Recombination Monophosphoryl Lipid A-Derived Vicosome for the Development of Preventive Cancer Vaccines. ACS Appl Mater Interfaces. 2020;12(40):44554-44562.

[2]. Ismaili J, et al. Monophosphoryl lipid A activates both human dendritic cells and T cells. J Immunol. 2002;168(2):926-932.

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

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