

## Certificate of Analysis

## MPLA (PHAD®)

Monophosphoryl Lipid A (Synthetic) (PHAD®)

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Physical State Powder Storage -20°C

**Expiration Date** One year from date of receipt

M Lot Number 5086PHA032

Avanti Lot Number 699800P-5MG-A-032

ANALYSIS	SPECIFICATION	RESULTS
Physical Examination	<b>Powder</b> : White solid which contains no foreign matter	Pass
TLC (75:25:3 Chloroform: Methanol: Water)	>99% Purity Ninhydrin: negative Iodine: one major spot Phosphorus: positive Charring: positive Water dip: one major spot	>99% Purity Ninhydrin: negative Iodine: one major spot Phosphorus: positive Charring: positive Water dip: one major spot
Proton NMR	NMR spectrum consistent with structure	Consistent with structure
TOF-MS	$[M-NH_4]^- = 1745.469 \pm 1 \text{ amu}$	[M-NH <sub>4</sub> ] <sup>-</sup> = 1744.29 amu
HPLC-ELSD	NLT 99% (AUC)	100% (AUC)

Approved By: Meredit Bayout

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