

## Certificate of Analysis

## 3D-(6-acyl) PHAD®

Monophosphoryl Hexa-acyl Lipid A, 3-Deacyl (Synthetic)

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Physical State Powder Storage -20°C

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

M Lot Number 5091PGD011

Avanti Lot Number 699855P-1MG-D-011

ANALYSIS	SPECIFICATION	RESULTS
Physical Examination	<b>Powder</b> : White solid which contains no foreign matter	Pass
TLC (65:25:4 Chloroform: Methanol: Water)	>99% Purity Ninhydrin: negative Iodine: one major spot Phosphorus: positive Charring: positive Water dip: one major spot	All Pass
HPLC-ELSD	NLT 99% (AUC)	100% (AUC)
Proton NMR	NMR spectrum consistent with structure	Consistent with structure
Phosphorus NMR	NMR spectrum consistent with structure	Consistent with structure
Mass Spectroscopy	[M-NH <sub>4</sub> ] <sup>-</sup> = 1729.469 ± 1 amu	[M-NH <sub>4</sub> ] <sup>-</sup> = 1729.7 amu

Melissa Bolin

Approved by: