

Certificate of Analysis

Heart CA

Cardiolipin (Heart, Bovine) (sodium salt)

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Molecular Weight 1494.319 (average based on fatty acid distribution in product)

Physical State Powder Storage -20°C

Expiration Date Three months from date of receipt

M Lot Number 5484PLB554

Avanti Lot Number 840012P-100MG-B-554

ANALYSIS	SPECIFICATION	RESULTS
Physical Examination	Powder : White solid which contains no foreign matter	Pass
TLC	>99% Purity Ninhydrin: negative lodine: 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	Spectrum consistent with structure	Spectrum consistent with structure
FAME (GC/FID)	Consistent with historical data $18:1 = \sim 5\%$ $18:2 = \sim 90\%$	Consistent with historical data
UV Oxidation	NMT 5% total all wavelengths	1% total
Calcium (ICP/MS)	NMT 500 ppm	BLOQ
Mass Spectroscopy	Exact Mass: $[M-2Na+H]^- = 1447.9 \pm 1$ amu; $[M-2Na]^{2-} = 723.5 \pm 1$ amu or Molecular Weight: $[M-2Na+H]^- = 1448.9 \pm 1$ amu; $[M-2Na]^{2-} = 724.0 \pm 1$ amu	[M-2Na] ²⁻ = 724.1 amu [M-2Na+H] ⁻ = 1448.5 amu

Approved By:

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