

## Certificate of Analysis

## VSA 2

Semisynthetic Saponin Adjuvant-VSA 2

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Molecular Weight1963.18Chemical FormulaC94H147NO42Physical StatePowderStorage-20°C

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

M Lot Number 7277PGA010

Avanti Lot Number 890813P-1MG-A-010

ANALYSIS	SPECIFICATION	RESULTS
Physical Examination	<b>Powder</b> : White solid which contains no foreign matter	Pass
TLC (65:35:8 Chloroform: Methanol: Water)	>99% Purity Ninhydrin: negative Iodine: one major spot Phosphorus: negative Charring: positive Water dip: one major spot	All Pass
Proton NMR	NMR spectrum consistent with structure	Consistent with structure
HPLC-ELSD	NLT 99% (AUC)	100% (AUC)
Mass Spectroscopy	$[M+NH_4+H]^{2+} = 991.09 \pm 1 \text{ amu}$	$[M+NH_4+H]^{2+} = 990.56$ amu

Approved By:

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