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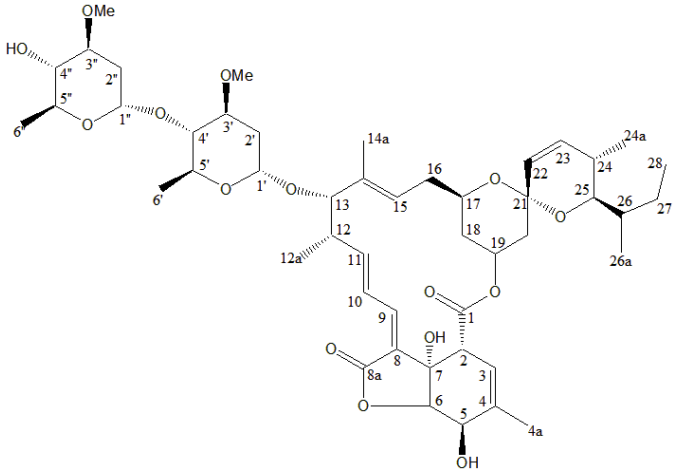
Certificate of Analysis



PRODUCT	***8a-oxo-avermectin B1a***
BATCH #	PA-038-163-301
ASSAY METHOD	HPLC, ^{1}HNMR
REPORT DATE	2019-10-03
CHEMICAL FORMULA	$C_{48}H_{70}O_{15}$
MOLECULAR WEIGHT	887.1 g/mol
CAS REG. #	N/A
STORAGE	< -18 degrees C; dark
EXPIRATION DATE	2020-10-04
NOTES	The maximum absorbance of 8a-oxo-avermectin B1a is at 280 nm, which produces an integrated peak area of 5,444.4 mAUs / mg/mL. At 245 nm, 8a-oxo-avermectin B1a produces an integrated peak area of 1,287.5 mAUs / mg/mL. Non-oxidized avermectins have a maximum absorbance at 245 nm. Avermectin B1a produces an integrated peak area of 7,013 mAUs / mg/mL at 245 nm. All impurities have UV characteristics similar to avermectin B1a. It was also assumed that their extinction coefficients were similar to B1a. Thus, the actual concentration of 8a-oxo-avermectin B1a at 245 nm is underrepresented by a factor of 1/0.236. The sum of the integrated impurities at 245 nm was 72.8 mAUs, representing 1.0% of the 8a-oxo-avermectin B1a sample.

Analytical Data

TEST	METHOD	SPECIFICATION	RESULT
HPLC	245 nm	> 95%	99.0%
^{1}H-NMR		Conforms	Conforms
Appearance	White/off-white solid		

Signed: Jan Glinski, Ph.D.
Planta Analytica LLC
October 4, 2019