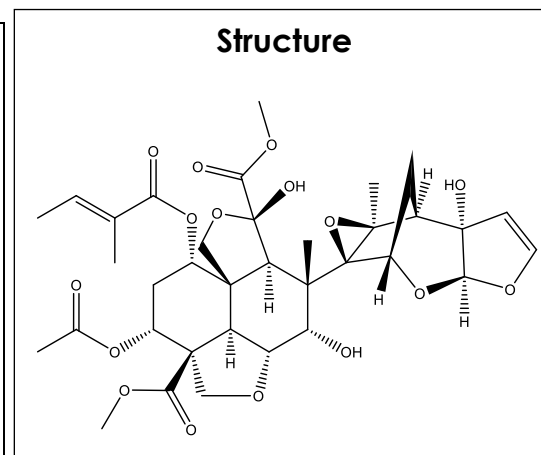


Certificate of Analysis

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PRODUCT NAME	Azadirachtin A
PART NUMBER	00011110
STANDARD TYPE	Primary (P)
LOT NUMBER	00011110-101B
REPORT NUMBER	CDXA-RSS-9432-00
SAMPLE NUMBER	CDXP-21-00476
DATE OF SAMPLE	07/23/2021
DATE OF REPORT	08/05/2021



CHEMICAL NAMES	2,7-Methanofuro[2,3-b]oxireno[e]oxepin, 1H,7H-naphtho[1,8-bc:4,4a-c']difuran-5,10a(8H)-dicarboxylic acid deriv., Azadirachtin, BioNEEM, Gronim, Oikos, Pestoneem
CHEMICAL FORMULA	C ₃₅ H ₄₄ O ₁₆
MOLECULAR WEIGHT (MW)	720.71
CHEMICAL FAMILY	Limonoids
CAS NUMBER	[11141-17-6]
EC#(EINECS)	601-089-4
RTECS	QL0539700

ANALYTICAL RESULTS

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	≥ 85%	96.1%
HPLC	0.700.10.2.METH22	≥ 90%	96.2%
NMR	0.700.12.4	Conforms to structure	Conforms to structure
Mass Spectrum	0.700.12.27	Conforms	Conforms
Residual Solvent*	USP <467>	NA	Methanol: 542 ppm
Water	0.700.12.37	NA	ND
Appearance	NA	NA	White powder

*Testing performed at an ISO 17025 accredited subcontracted laboratory.

ADJUSTED PURITY: 96.1% IS BASED ON (100 - 0.1 SOLVENTS - 0.0 WATER) X 96.2% HPLC

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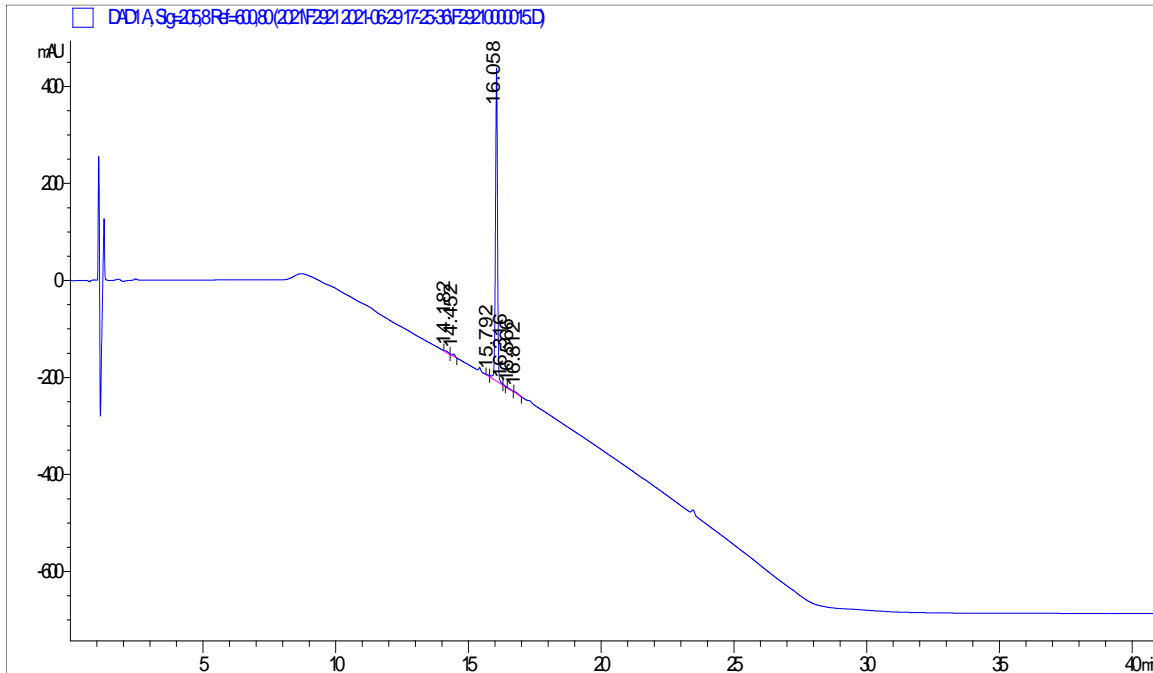
STORAGE CONDITIONS

STORAGE -20 °C in a dry place.
EXPIRATION DATE 07/2026 under the above conditions.

ANALYTICAL CONDITIONS

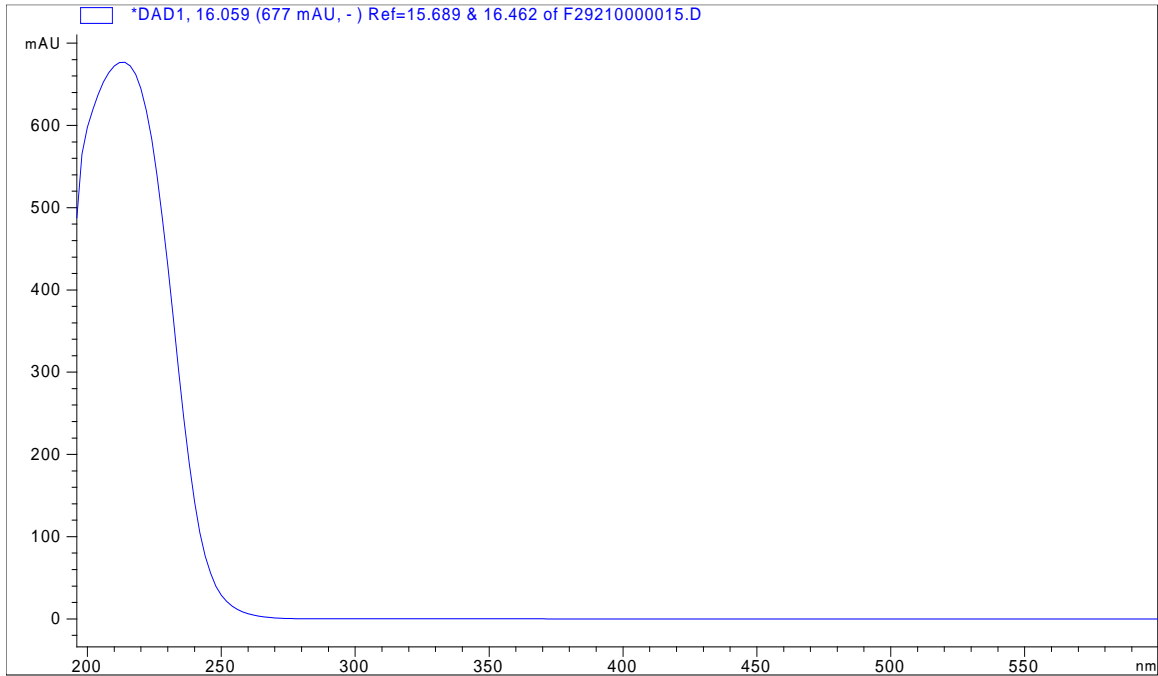
INSTRUMENT AGILENT 1260 HPLC UV-VIS (DAD) ; AB-SCIEX 6600 TRIPLE TOF
COLUMN Phenomenex Luna C18(2) 150 x 2.00 mm, 5 µm particle size
MOBILE PHASE A - 0.1% Trifluoroacetic acid in Ultrapure water, B - Acetonitrile;
 Isocratic 5% B for 5 minutes, then increasing to 95% B over 20 minutes. Hold at 95% B for 15 minutes, then decreasing to 5% B over 1 minute.
COLUMN TEMP. 60 °C
FLOW RATE 0.4 mL/minute
INJECTION VOL. 1.0 µL
INJECTION CONC. 1.7 mg/mL in Methanol
DETECTION 205 ± 4 nm

HPLC CHROMATOGRAM OF AZADIRACHTIN A (CDXP-21-00476)

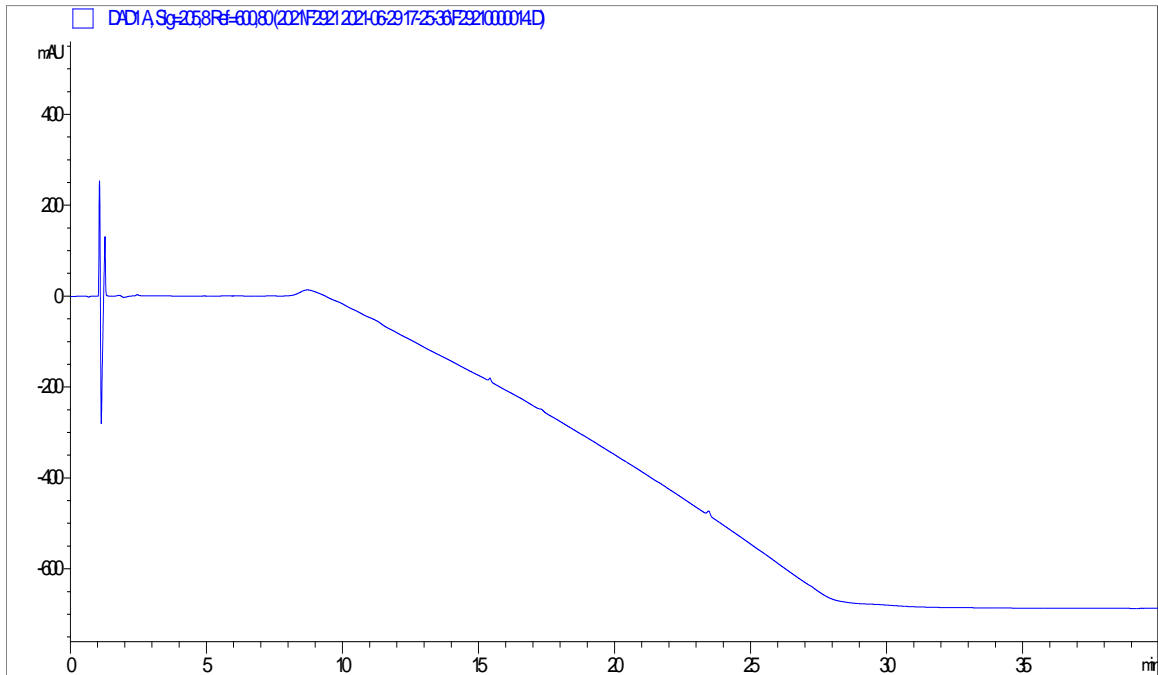


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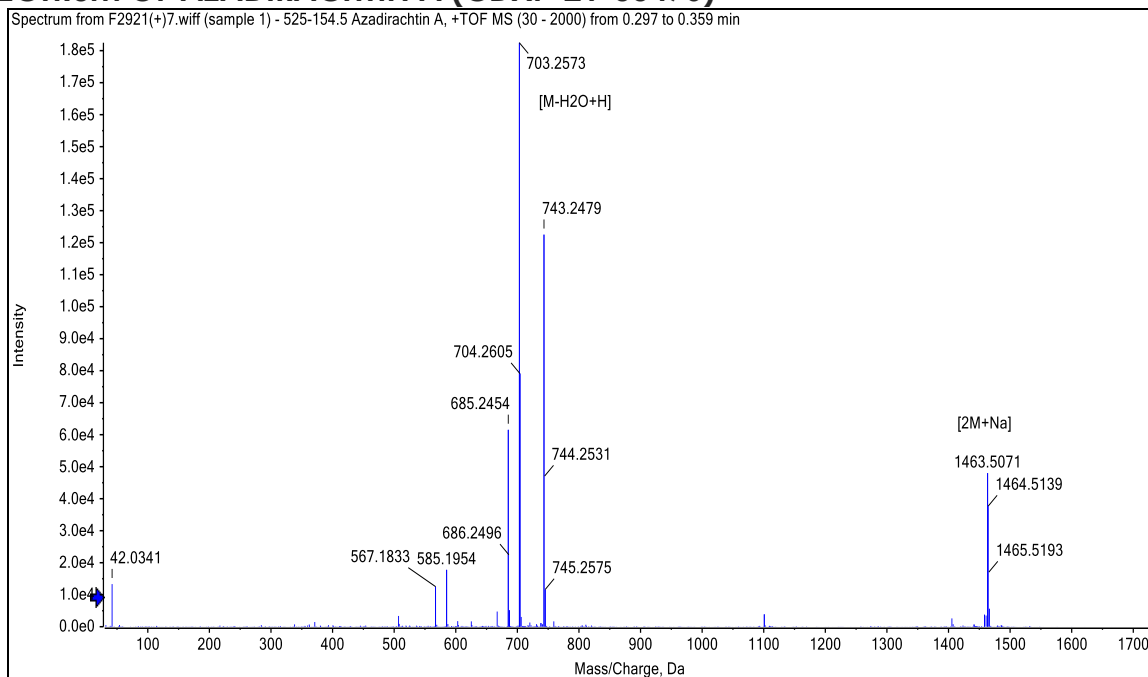
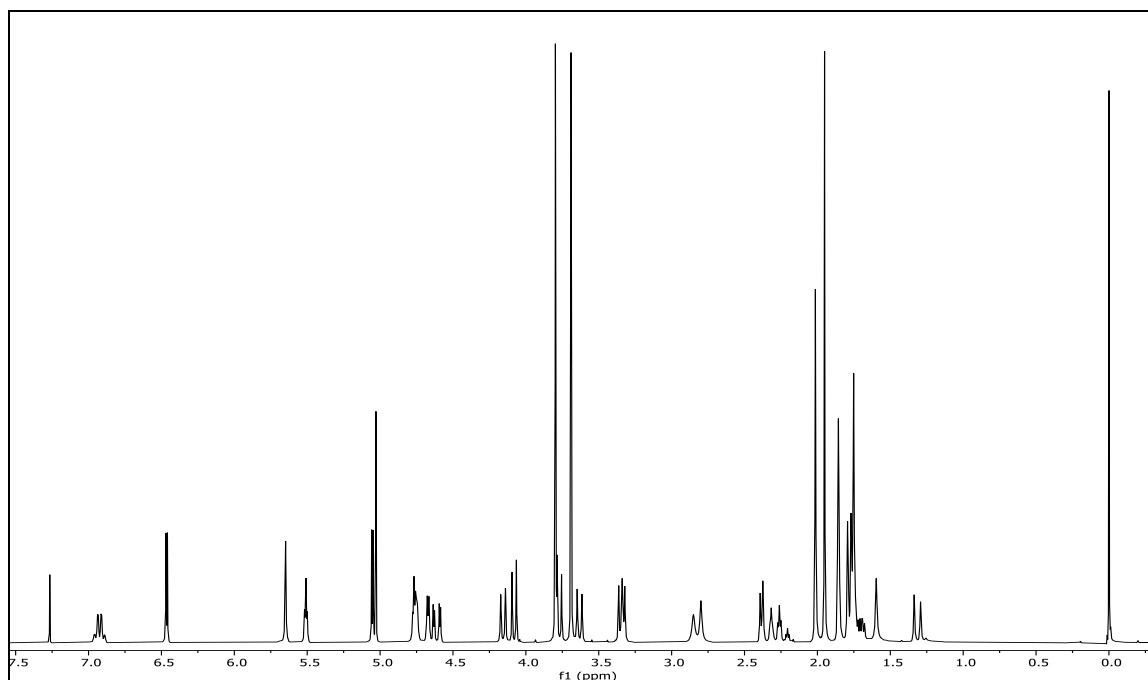
UV SPECTRUM AT 16.1 MINUTES



HPLC CHROMATOGRAM OF DILUENT BLANK



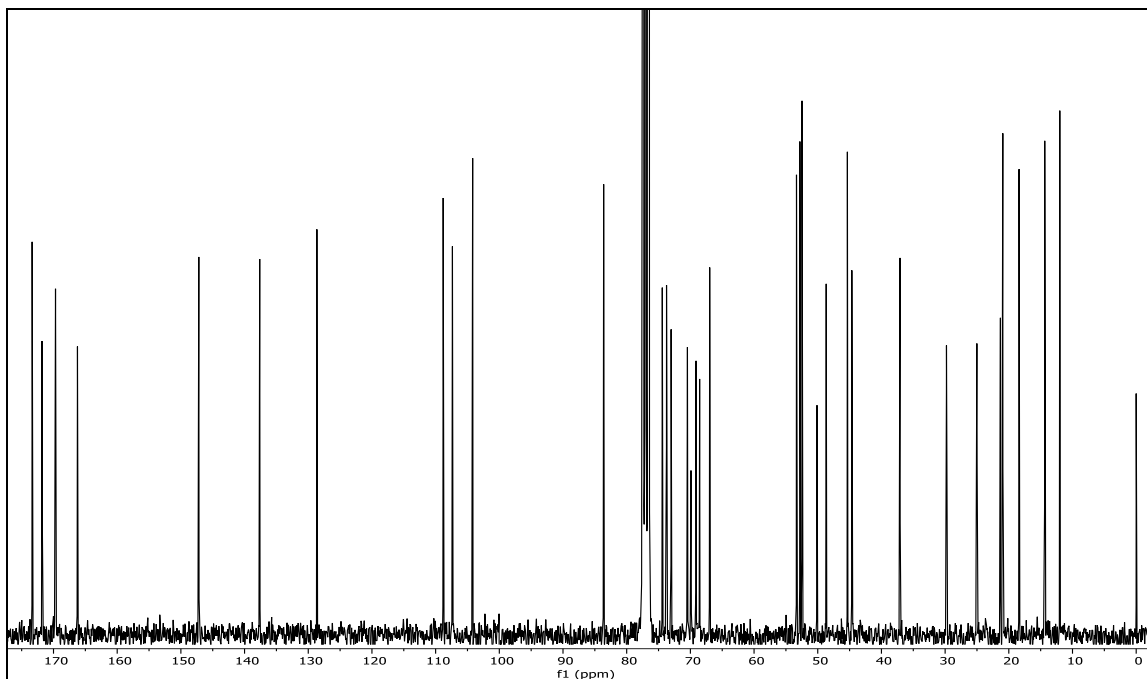
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MASS SPECTRUM OF AZADIRACHTIN A (CDXP-21-00476)

¹H-NMR SPECTRUM OF AZADIRACHTIN A (CDXP-21-00476) IN CDCl₃ + TMS


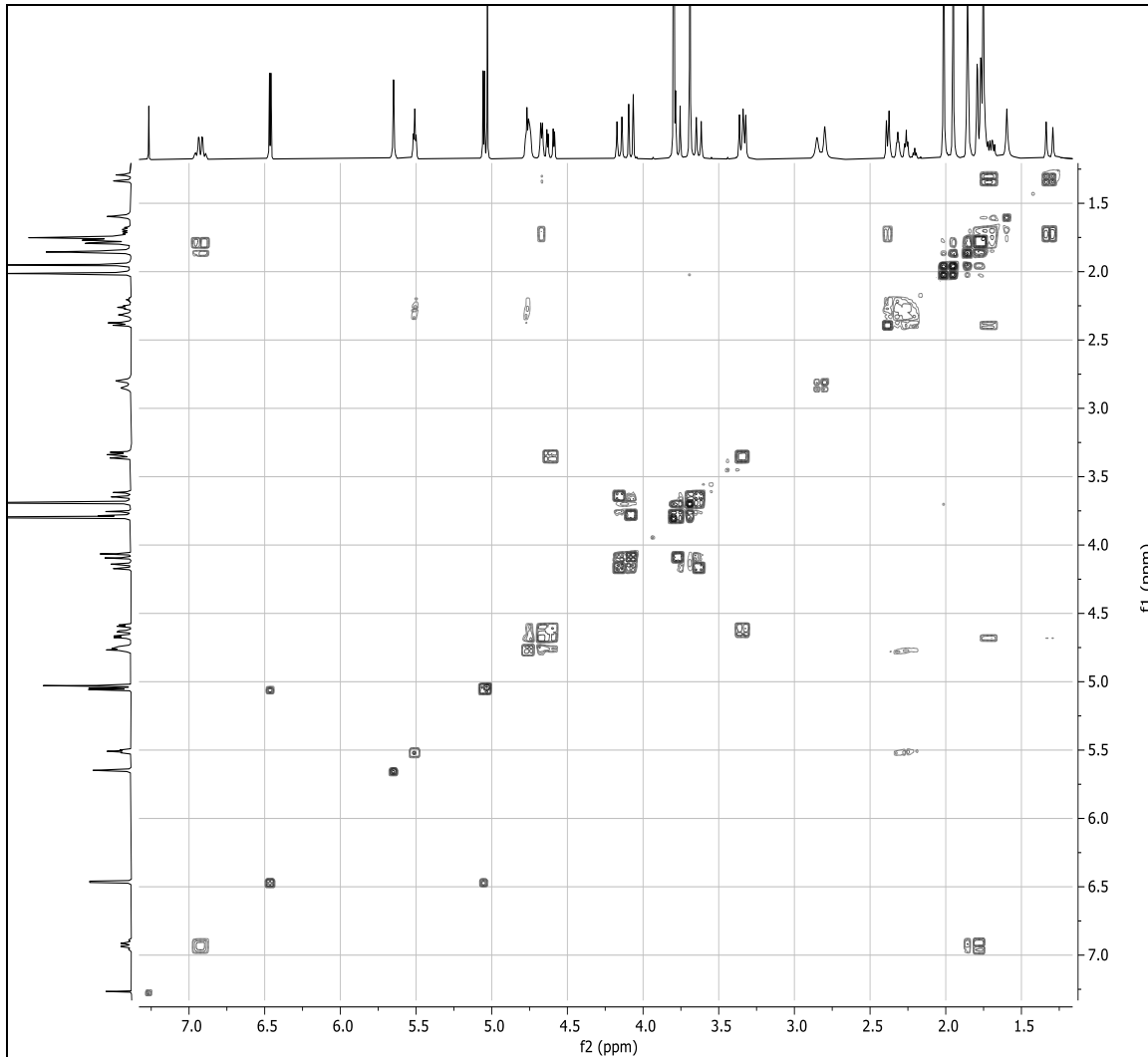
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¹³C-NMR SPECTRUM AZADIRACTIN A (CDXP-21-00476) IN CDCl₃ + TMS

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COSY-NMR SPECTRUM OF AZADIRACHTIN A (CDXP-21-00476) IN CDCl₃ + TMS

REVISION HISTORY

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	08/05/2021	New report

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