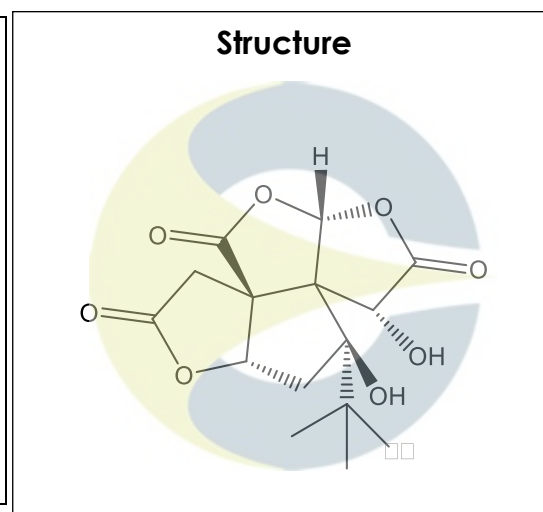


**Certificate of Analysis**

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<b>PRODUCT NAME</b>	Bilobalide
<b>PART NUMBER</b>	00002274
<b>STANDARD TYPE</b>	Primary (P)
<b>LOT NUMBER</b>	00002274-312
<b>REPORT NUMBER</b>	CDXA-RSS-8001-01
<b>SAMPLE NUMBER</b>	CDXP-18-00391
<b>DATE OF SAMPLE</b>	04/30/2019
<b>DATE OF RE-EVALUATION</b>	03/10/2022
<b>DATE OF REPORT</b>	04/05/2022



<b>CHEMICAL NAMES</b>	[5R-(3aS*,5aα,8β,8aS*,9α,10aα)]- 9-(1,1-Dimethylethyl)-10,10α-dihydro-8,9-dihydroxy-4H,5aH,9H-furo[2,3-b]furo(3',2':2,3)cyclopenta[1,2-c]furan-2,4,7(3H,8H)-trione; (-)-Bilobalide
<b>CHEMICAL FORMULA</b>	C <sub>15</sub> H <sub>18</sub> O <sub>8</sub>
<b>MOLECULAR WEIGHT (MW)</b>	326.30
<b>CHEMICAL FAMILY</b>	Terpenoids
<b>CAS NUMBER</b>	[33570-04-6]
<b>EC#(EINECS)</b>	608-862-9
<b>RTECS</b>	LV1665000

**ANALYTICAL RESULTS**

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	≥ 85%	94.0%
HPLC	0.700.10.2.METH22	≥ 90%	98.3%
NMR	99.1-04-2.0-000122	Conforms to structure	Conforms to structure
Mass Spectrum	99.1-04-3.0-000126	Conforms	Conforms
Residual Solvent*	99.1-CDXA-3.0-000621	NA	ND
Water	0.700.12.37	NA	4.4%
Appearance	NA	NA	White powder

\*Testing performed at an ISO 17025 accredited subcontracted laboratory.

ADJUSTED PURITY: 94.0% IS BASED ON (100 - 0.0 SOLVENTS - 4.4 WATER) X 98.3% HPLC

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### STORAGE CONDITIONS

**STORAGE** -20 °C in a dry place.  
**EXPIRATION DATE** 03/2027 under the above conditions.

### ANALYTICAL CONDITIONS

**INSTRUMENT** AGILENT 1260 HPLC UV-VIS (DAD) CONNECTED TO DIONEX CORONA VEO CHARGED AEROSOL DETECTOR (CAD); 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.

**COLUMN TEMP.** 60 °C

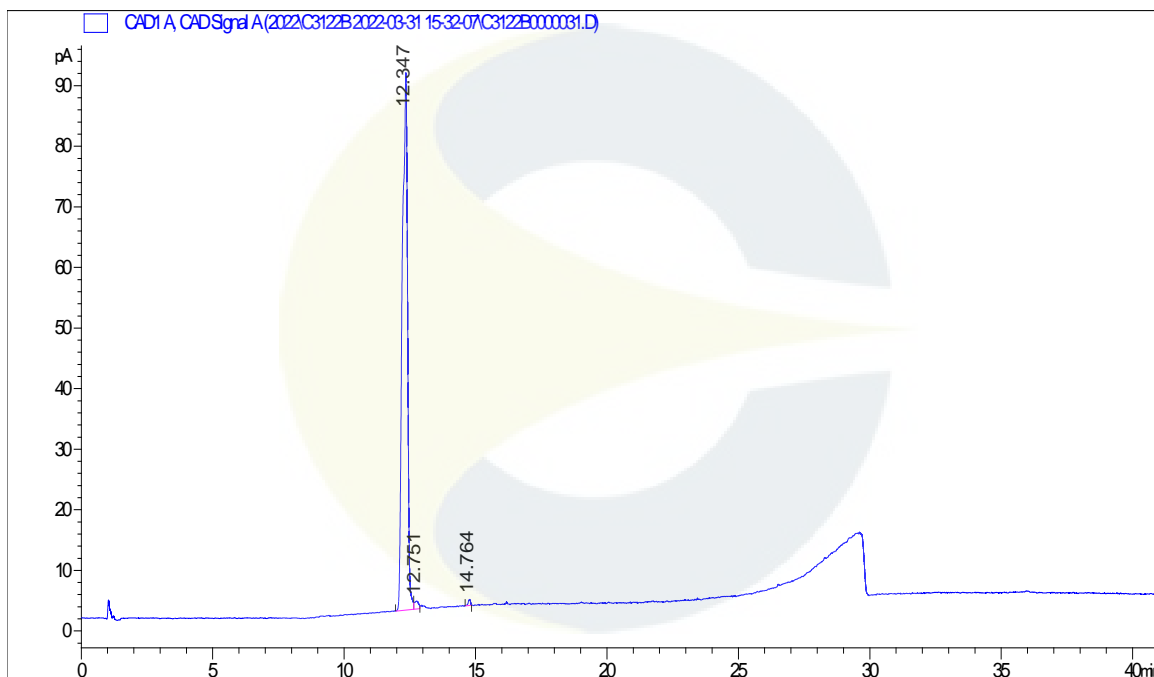
**FLOW RATE** 0.4 mL/minute

**INJECTION VOL.** 8.0 µL

**INJECTION CONC.** 1.0 mg/mL in Methanol

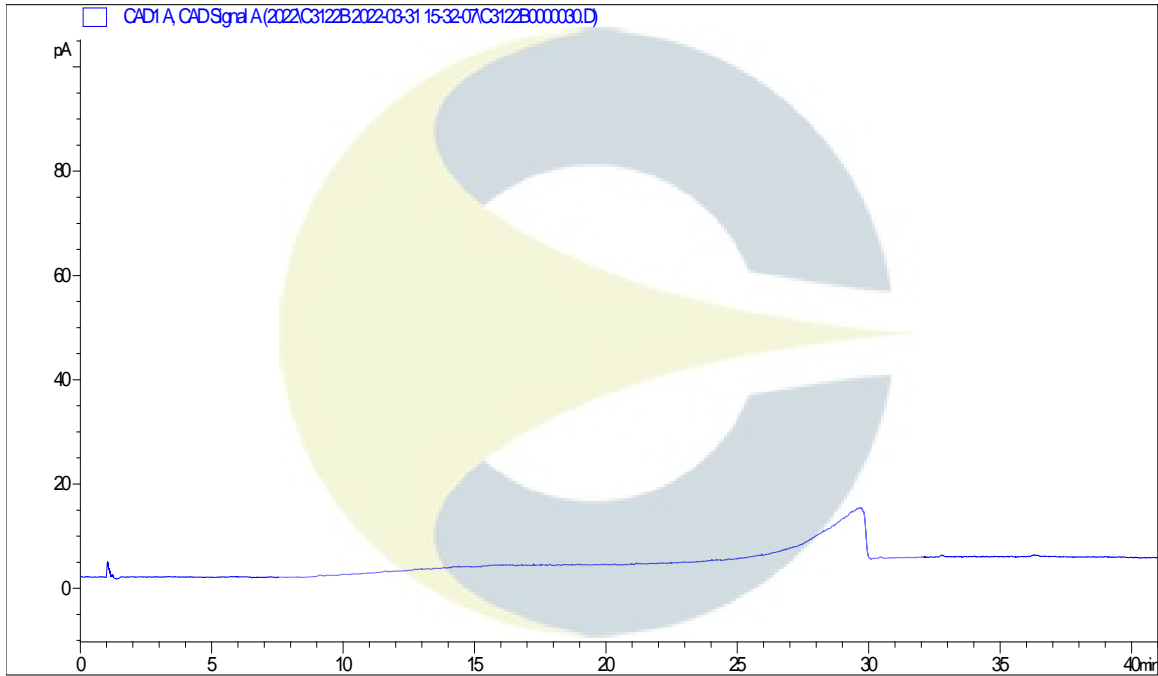
**DETECTION** CAD

### HPLC CHROMATOGRAM OF BILOBALIDE (CDXP-18-00391)

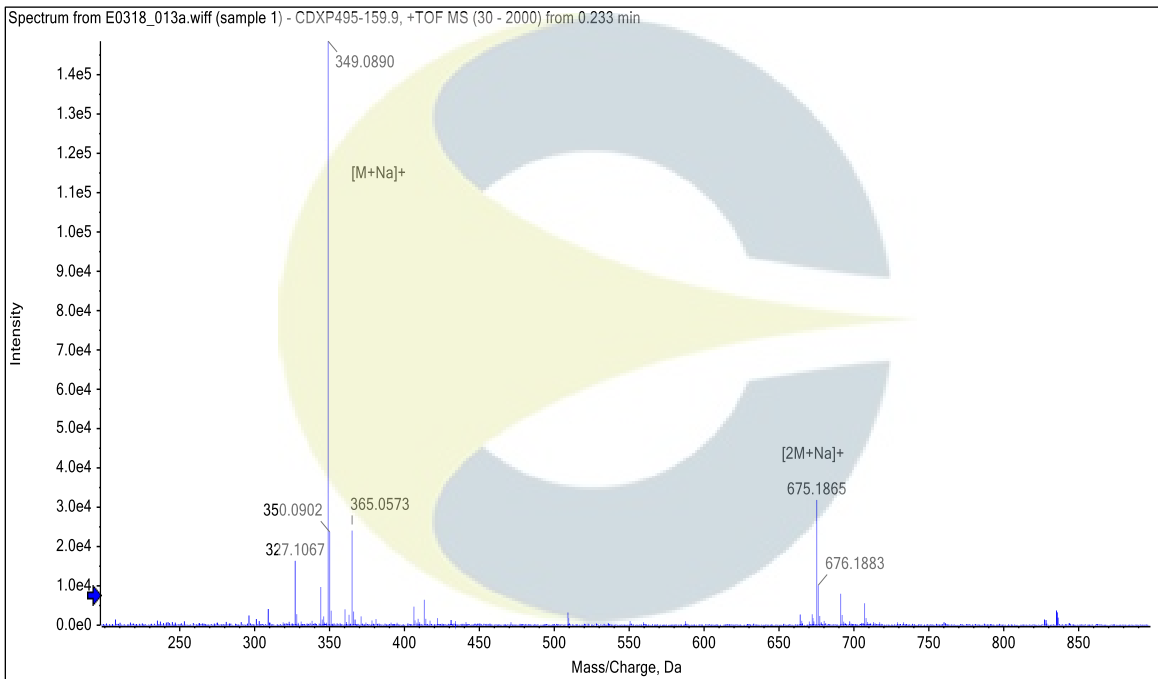


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**HPLC CHROMATOGRAM OF DILUENT BLANK**



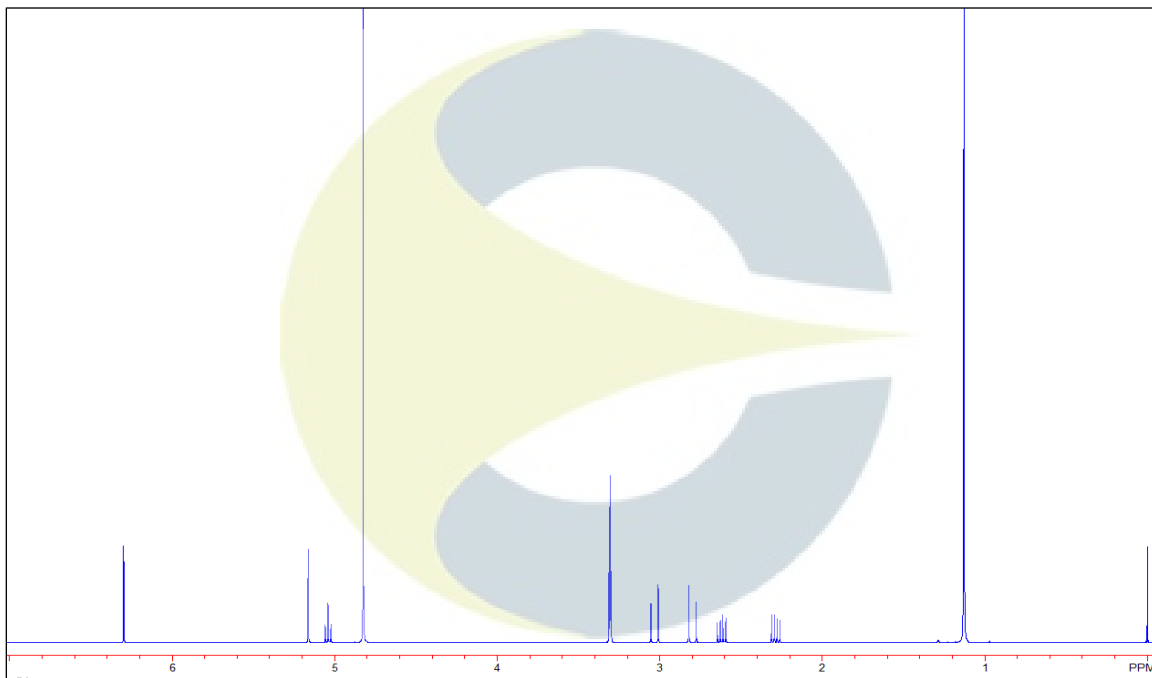
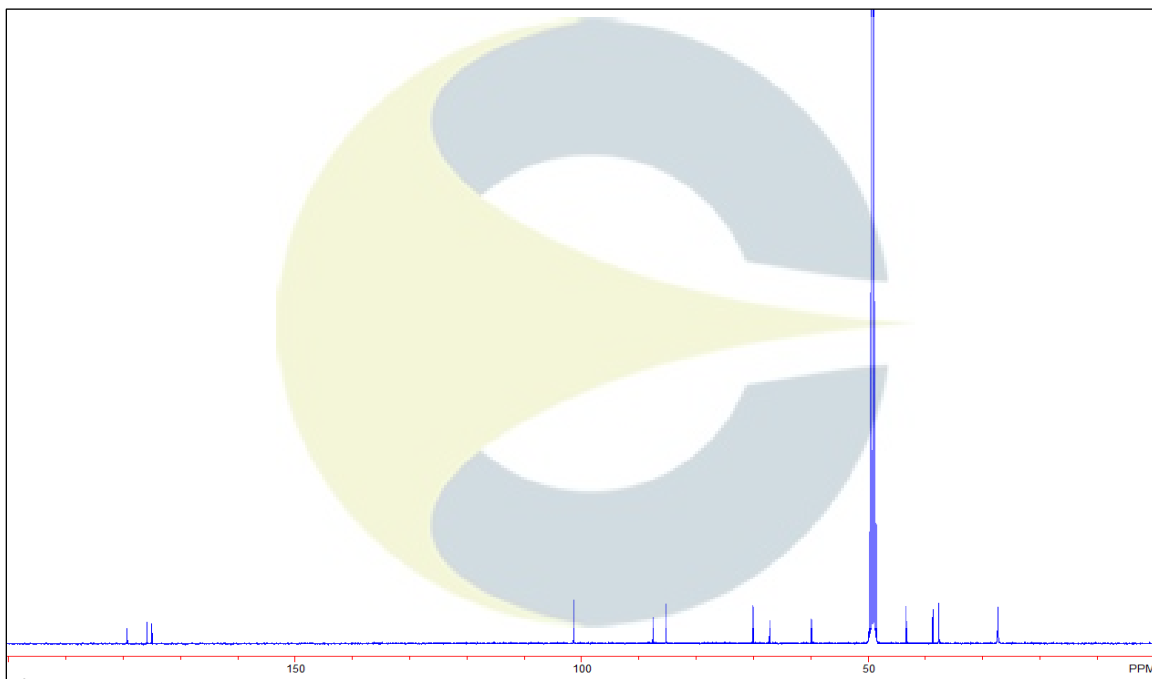
**MASS SPECTRUM OF BILOBALIDE (CDXP-18-00391)**



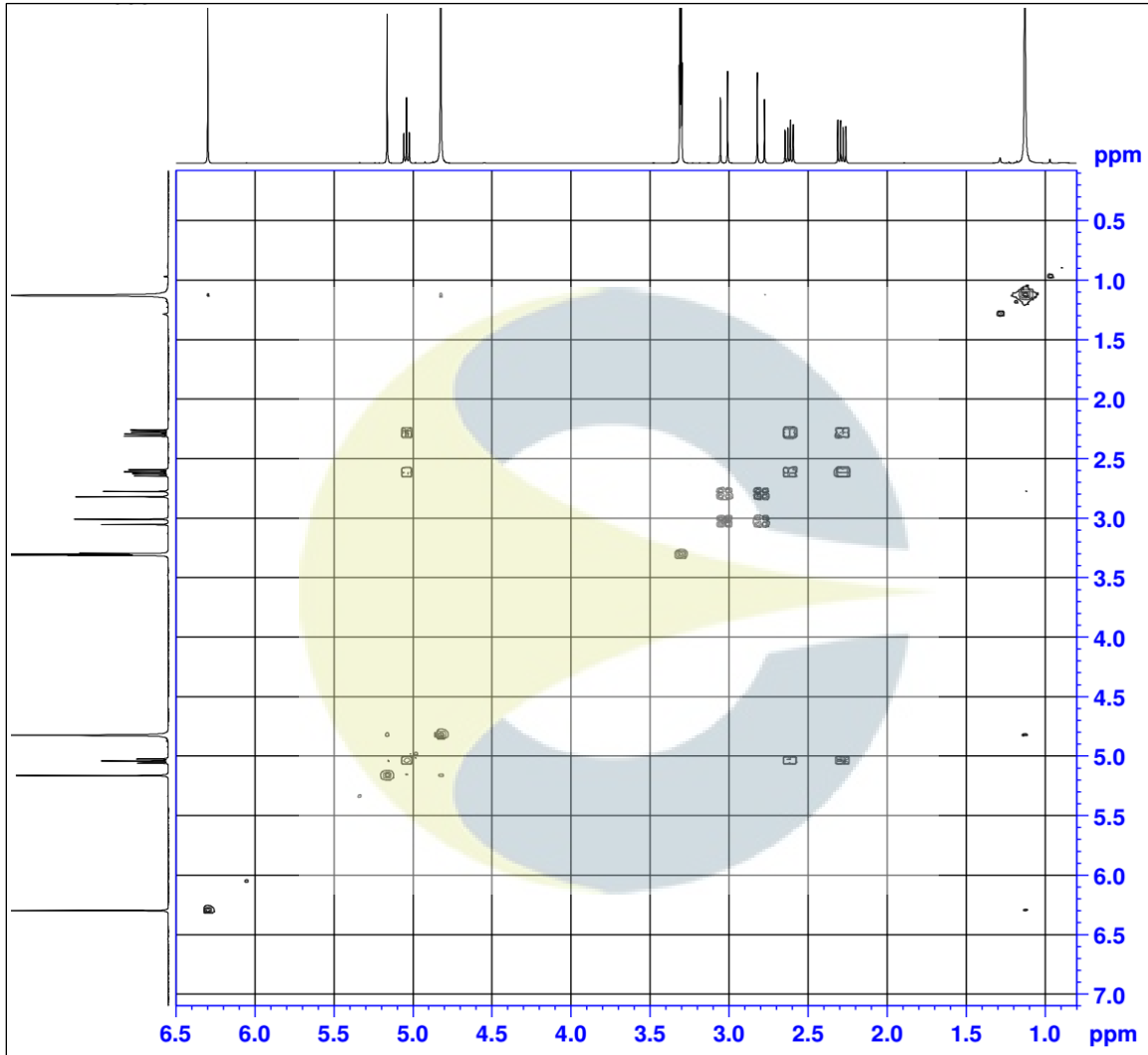
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**<sup>1</sup>H-NMR SPECTRUM OF BILOBALIDE (CDXP-18-00391) IN CD<sub>3</sub>OD****<sup>13</sup>C-NMR SPECTRUM OF BILOBALIDE (CDXP-18-00391) IN CD<sub>3</sub>OD**

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**COSY-NMR SPECTRUM OF BILOBALIDE (CDXP-18-00391) IN CD<sub>3</sub>OD**

**REVISION HISTORY**

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	05/18/2018	New report
01	04/05/2022	Passed re-evaluation by HPLC and KF. Updated expiry, chromatograms, and analytical conditions

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