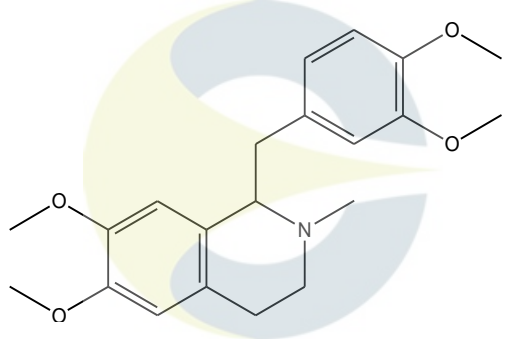


Certificate of Analysis

For Laboratory Use Only

PRODUCT NAME	DL-Laudanosine	<div style="text-align: center;"> Structure  </div>
PART NUMBER	00012075	
STANDARD TYPE	Analytical Standard (AS)	
LOT NUMBER	00012075-870	
REPORT NUMBER	CDXA-RSS-7111-01	
SAMPLE NUMBER	CDXA-16-004054	
DATE OF SAMPLE	03/30/2016	
DATE OF REEVALUATION	04/28/2020	
DATE OF REPORT	05/27/2020	

CHEMICAL NAMES	1-[(3,4-Dimethoxyphenyl)methyl]-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline; N-Methyltetrahydropapaverine
CHEMICAL FORMULA	C ₂₁ H ₂₇ NO ₄
MOLECULAR WEIGHT (MW)	357.44
CHEMICAL FAMILY	Alkaloids
CAS NUMBER	[1699-51-0]
EC#(EINECS)	216-923-9
RTECS	NX5070000

ANALYTICAL RESULTS

TEST	METHOD	SPECIFICATION	RESULT
HPLC	0.700.10.2.METH22	NA	99.9%
Mass Spectrum	Direct Infusion, ESI (+)	Conforms	Conforms
Appearance	NA	NA	White powder

STORAGE CONDITIONS

STORAGE	Room Temperature in a dry place.
EXPIRATION DATE	04/2025 under the above conditions.

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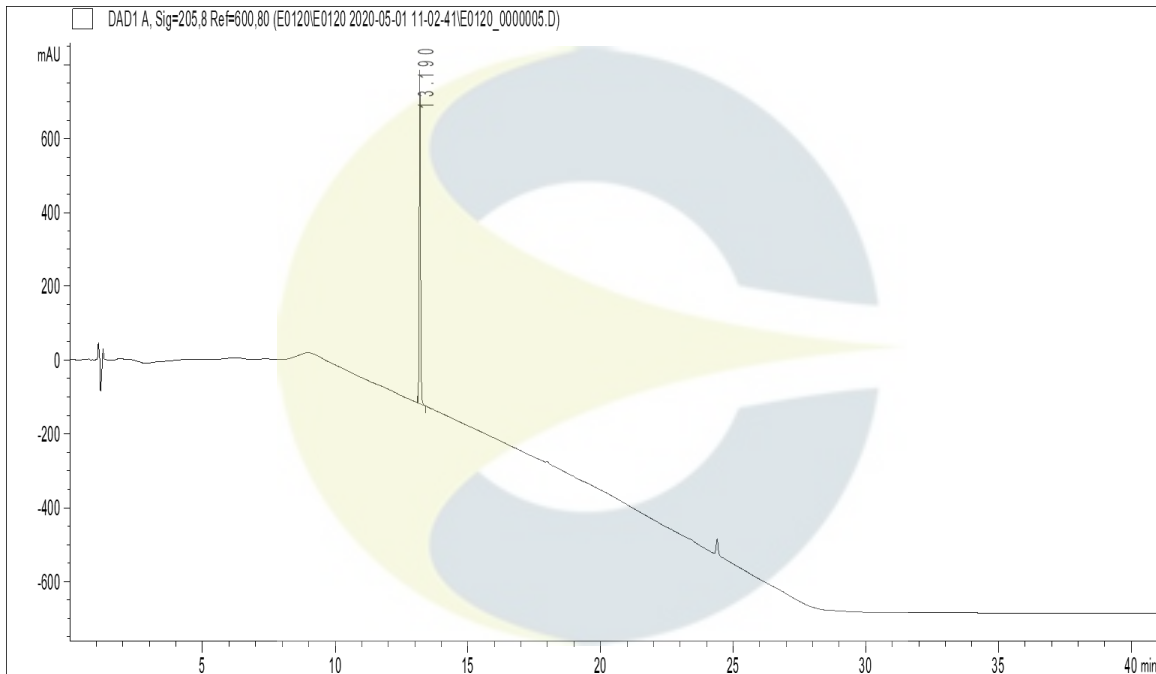
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ANALYTICAL CONDITIONS

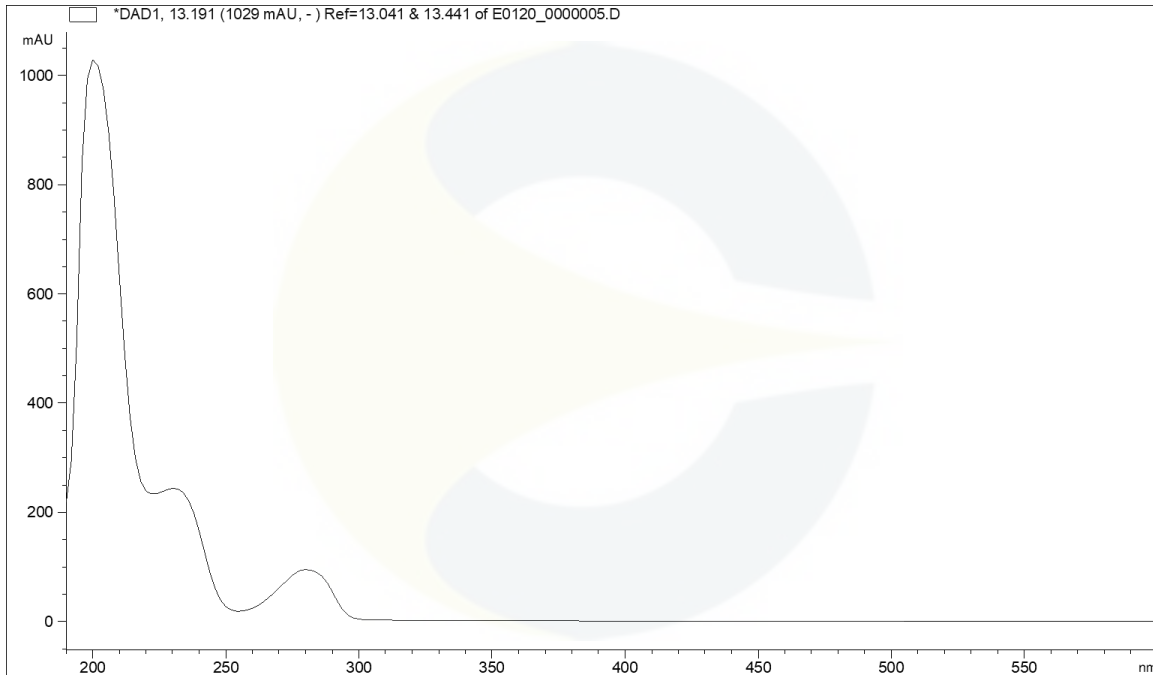
INSTRUMENT	AGILENT 1260 HPLC UV-VIS (DAD); AGILENT 6510 QTOF
COLUMN	Phenomenex Luna C18(2) 150 x 2.00 mm, 5 µm particle size
MOBILE PHASE	A - 0.1% Trifluoroacetic acid in Ultrapure water, B - Acetonitrile; Isocratic 5% B for 5 minutes, then increasing to 95% B over 20 minutes. Hold at 95% B for 15 minutes.
COLUMN TEMP.	60 °C
FLOW RATE	0.4 mL/minute
INJECTION VOL.	0.1 µL
INJECTION CONC.	1.2 mg/mL in Methanol
DETECTION	205 ± 4 nm

HPLC CHROMATOGRAM OF DL-LAUDANOSINE (CDXA-16-004054)

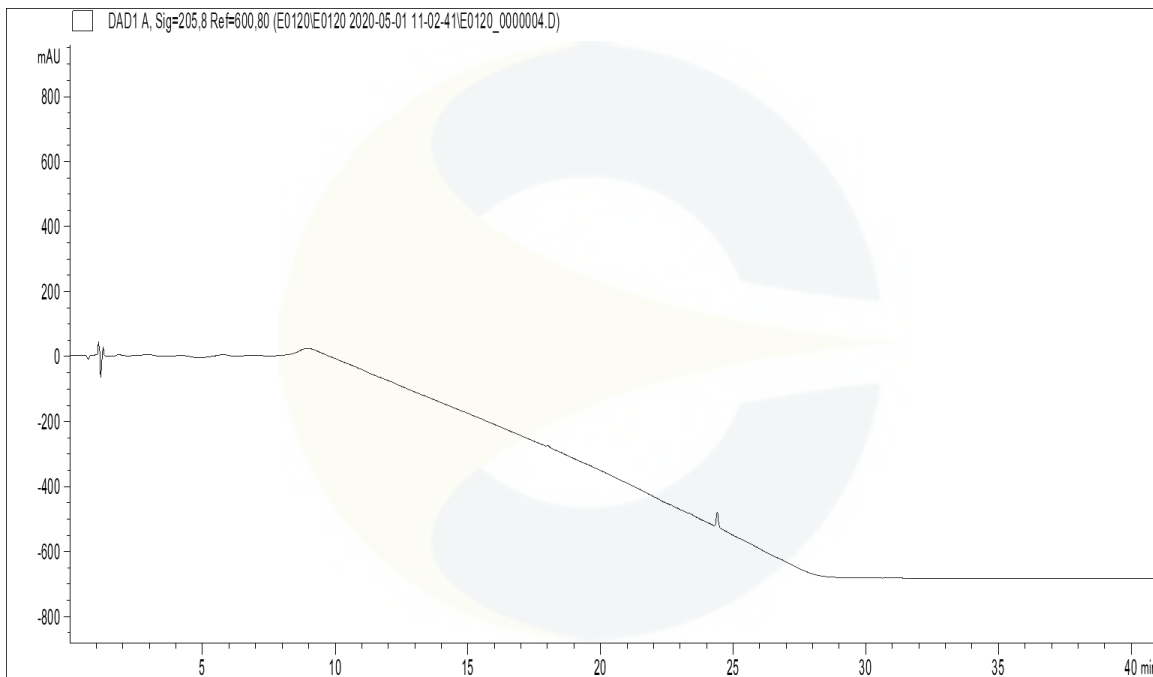


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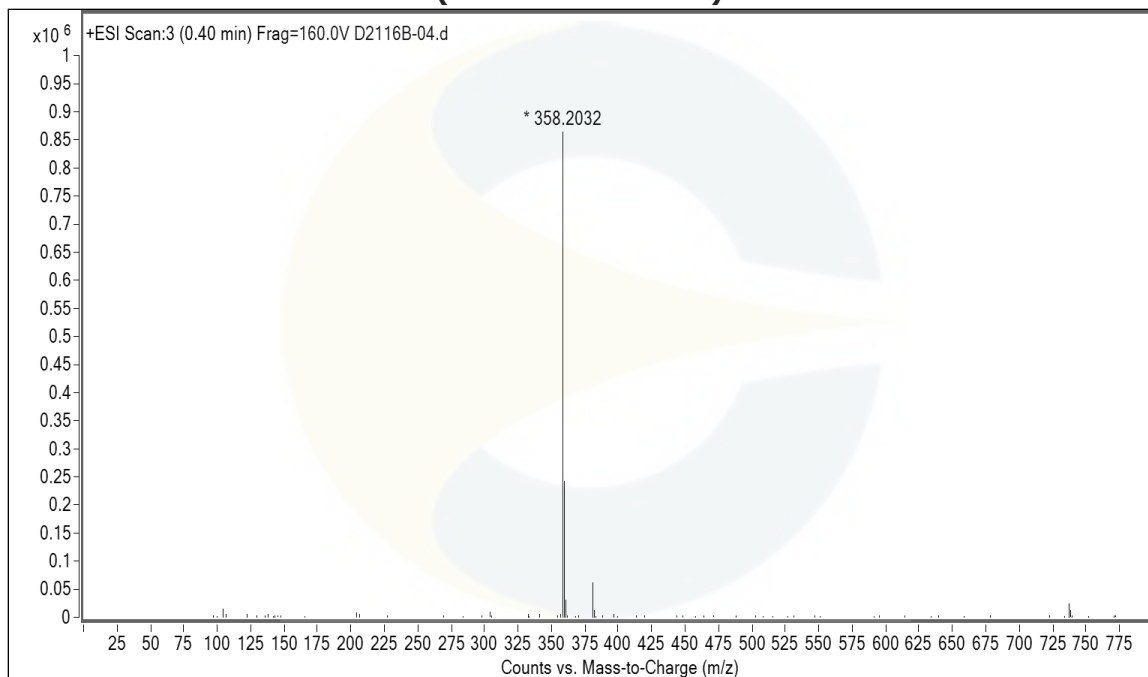
UV SPECTRUM AT RT 13.2 MINUTES



HPLC CHROMATOGRAM OF DILUENT BLANK



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MASS SPECTRUM OF DL-LAUDANOSINE (CDXA-16-004054)

REVISION HISTORY

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	04/25/2016	New report.
01	05/27/2020	Passed re-evaluation by HPLC. Updated purity, chromatograms, analytical conditions, expiration date, and removed melting point.

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