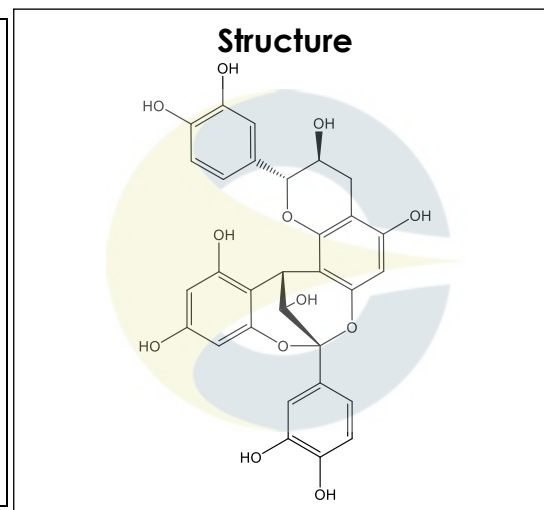


**Certificate of Analysis**

For Laboratory Use Only

<b>PRODUCT NAME</b>	Procyanidin A1
<b>PART NUMBER</b>	00016223
<b>STANDARD TYPE</b>	Analytical Standard (AS)
<b>LOT NUMBER</b>	00016223-47A
<b>REPORT NUMBER</b>	CDXA-RSS-4395-04
<b>SAMPLE NUMBER</b>	CDXA-11-1624
<b>DATE OF SAMPLE</b>	03/08/2011
<b>DATE OF RE-EVALUATION</b>	11/30/2015 (1 <sup>st</sup> ); 07/21/2020 (2 <sup>nd</sup> )
<b>DATE OF REPORT</b>	04/26/2021



<b>CHEMICAL NAMES</b>	(2 <i>R</i> ,3 <i>S</i> ,8 <i>S</i> ,14 <i>R</i> ,15 <i>R</i> )-2,8-Bis(3,4-dihydroxyphenyl)-3,4-dihydro-8,14-methano-2 <i>H</i> ,14 <i>H</i> -1-benzopyrano[7,8- <i>d</i> ][1,3]benzodioxocin-3,5,11,13,15-pentol; Proanthocyanidin A <sub>1</sub> ; (+)-Proanthocyanidin A <sub>1</sub> ; (+)-Epicatechin-(4β-8,2β-O-7)-catechin
<b>CHEMICAL FORMULA</b>	C <sub>30</sub> H <sub>24</sub> O <sub>12</sub>
<b>MOLECULAR WEIGHT (MW)</b>	576.50
<b>CHEMICAL FAMILY</b>	Anthocyanidins
<b>CAS NUMBER</b>	[103883-03-0]
<b>EC#(EINECS)</b>	NA
<b>RTECS</b>	NA

**ANALYTICAL RESULTS**

TEST	METHOD	SPECIFICATION	RESULT
HPLC	0.700.10.2.METH22	≥ 75%	99.9%
Mass Spectrum	Direct Infusion, ESI (+)	Conforms	Conforms
Appearance	NA	NA	Tan powder

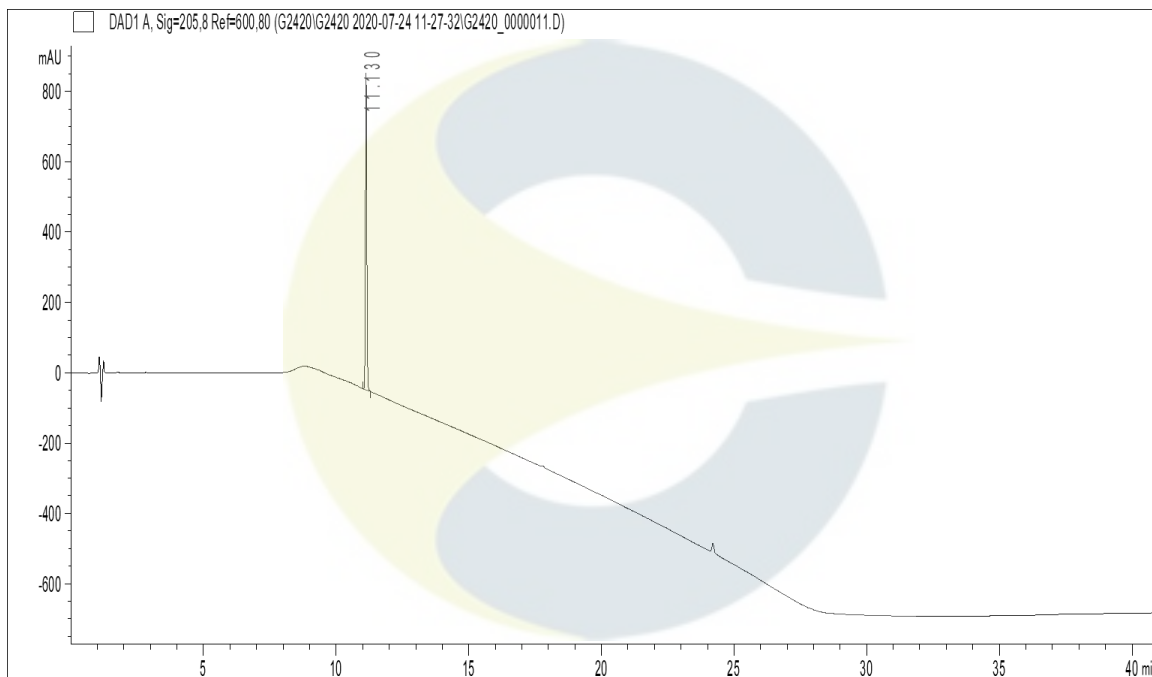
**STORAGE CONDITIONS**

<b>STORAGE</b>	+4 °C in a dry place.
<b>EXPIRATION DATE</b>	07/2025 under the above conditions.

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**ANALYTICAL CONDITIONS**

<b>INSTRUMENT</b>	AGILENT 1260 HPLC UV-VIS (DAD); AGILENT 6510 Q-TOF
<b>COLUMN</b>	Phenomenex Luna C18(2) 150 x 2.00 mm, 5 µm particle size
<b>MOBILE PHASE</b>	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.
<b>COLUMN TEMP.</b>	60 °C
<b>FLOW RATE</b>	0.4 mL/minute
<b>INJECTION VOL.</b>	0.1 µL
<b>INJECTION CONC.</b>	1.3 mg/mL in Methanol
<b>DETECTION</b>	205 ± 4 nm

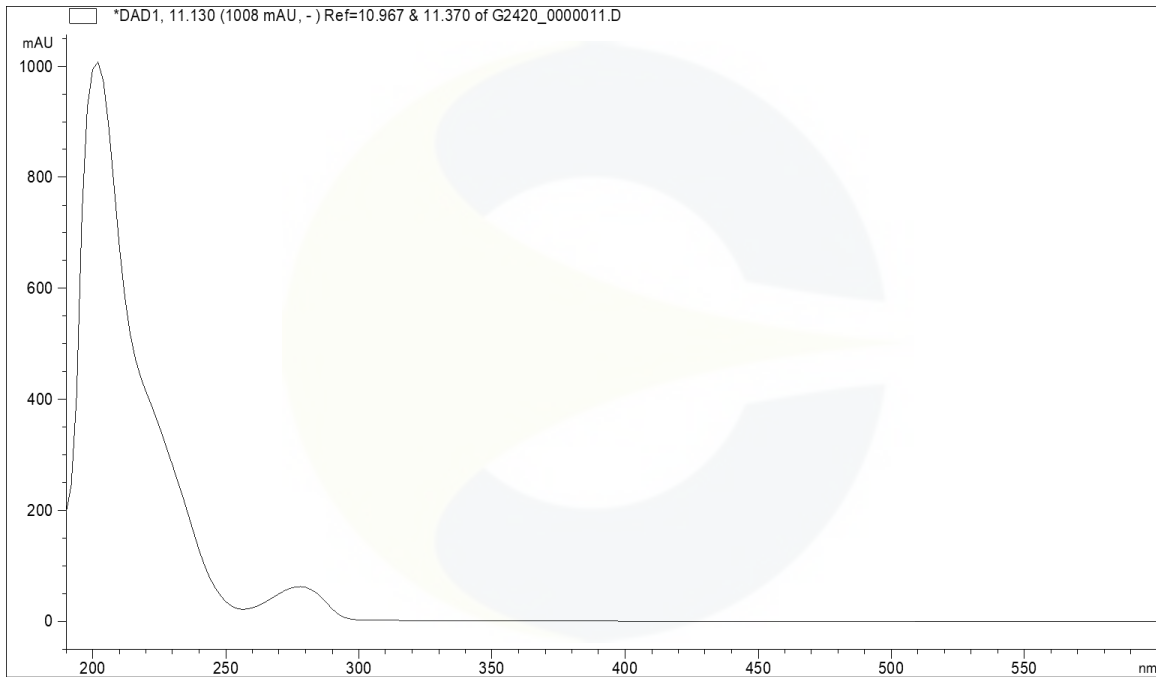
**HPLC CHROMATOGRAM OF PROCYANIDIN A1 (CDXA-11-1624)**


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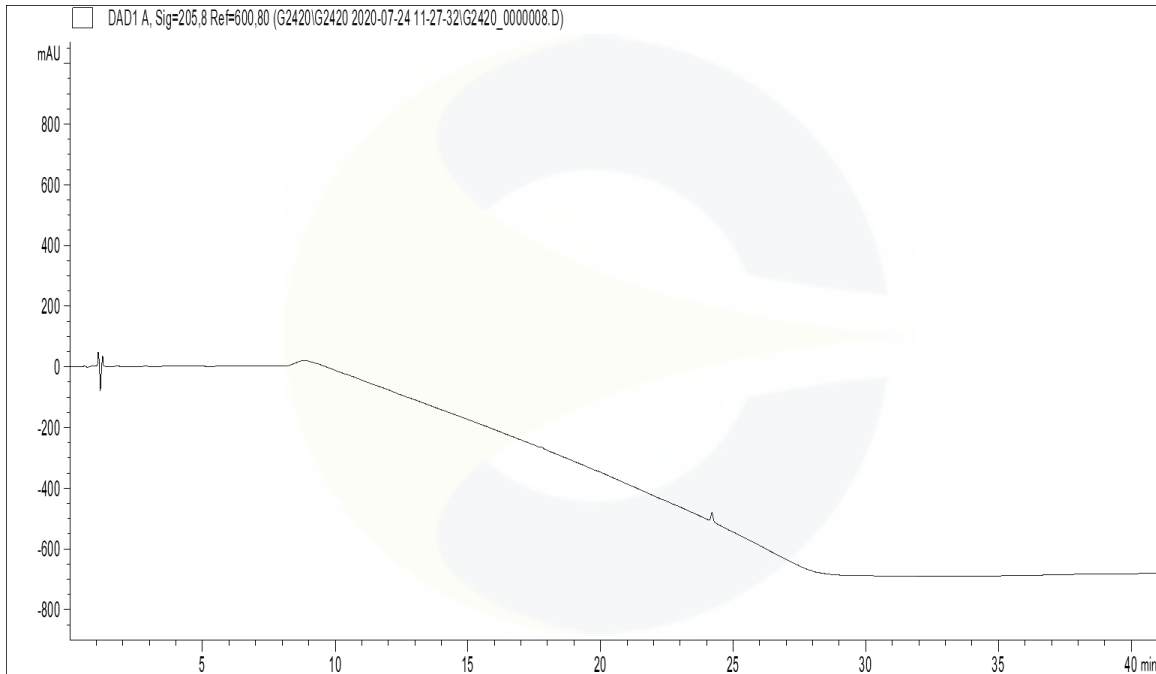
## Certificate of Analysis

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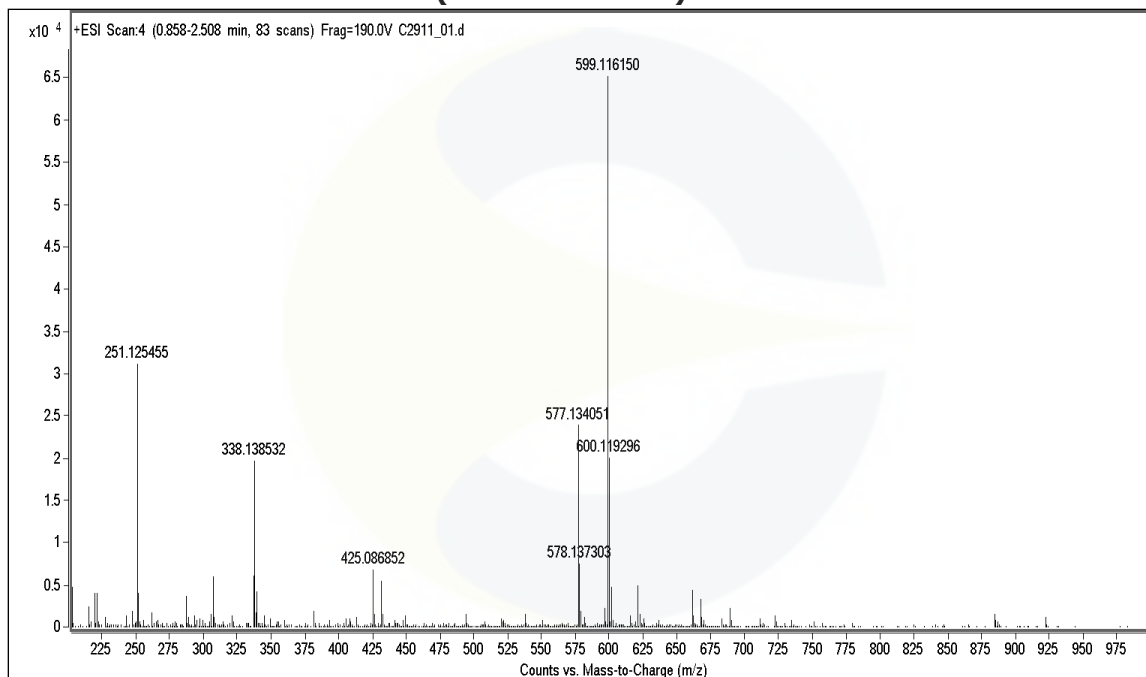
## UV SPECTRUM AT 11.1 MINUTES



## HPLC CHROMATOGRAM OF DILUENT BLANK



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**MASS SPECTRUM OF PROCYANIDIN A1 (CDXA-11-1624)**

**REVISION HISTORY**

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	05/10/2011	New report
01	12/30/2015	Passed re-evaluation by HPLC. Updated expiration date, chemical structure, standard type, chemical names, and melting point.
02	08/12/2020	Passed re-evaluation by HPLC. Updated chemical structure, expiration date, analytical results, appearance, analytical conditions, chromatograms, UV spectrum, and removed melting point.
03	04/09/2021	Revised CAS number, chemical names, and chemical structure.
04	04/26/2021	Updated part number to align with new CAS number from revision 03. Added additional chemical names.

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