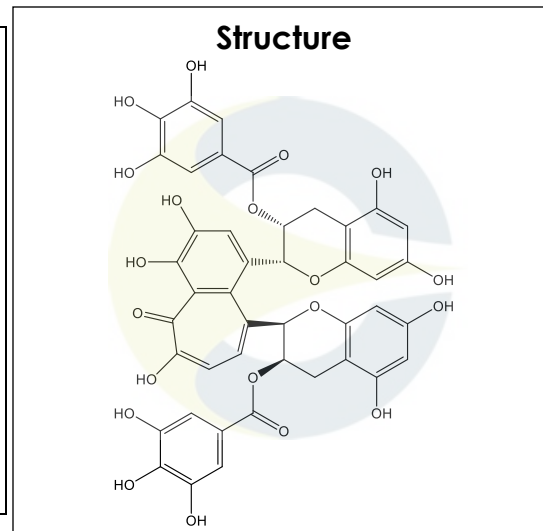


Certificate of Analysis

For Laboratory Use Only

PRODUCT NAME	Theaflavine-3,3'-digallate
PART NUMBER	00020254
STANDARD TYPE	Primary (P)
LOT NUMBER	00020254-841
REPORT NUMBER	CDXA-RSS-7341-02
SAMPLE NUMBER	CDXA-16-012623
DATE OF SAMPLE	10/03/2016
DATE OF RE-EVALUATION	11/05/2020
DATE OF REPORT	12/10/2020



CHEMICAL NAMES	Theaflavin 3,3'-di-O-gallate
CHEMICAL FORMULA	C ₄₃ H ₃₂ O ₂₀
MOLECULAR WEIGHT (MW)	868.70
CHEMICAL FAMILY	Catechins
CAS NUMBER	[30462-35-2]
EC#(EINECS)	N/A
RTECS	DH9250000

ANALYTICAL RESULTS

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	≥ 85%	91.4%
HPLC	0.700.10.2.METH74	≥ 90%	99.1%
NMR	4.5.3-CD-4.0-000338	Conforms to structure	Conforms to structure
Mass Spectrum	99.1-CDXA-2.0-000126	Conforms	Conforms
Residual Solvent	99.1-CD-10.0-000115	NA	Methanol – 0.1% Acetonitrile – 0.3% Acetone < 0.1%
Water	0.700.12.37	NA	7.4%
Appearance	NA	NA	Red powder

ADJUSTED PURITY: 91.4% IS BASED ON (100 - 0.4 SOLVENTS - 7.4 WATER) X 99.1% HPLC

This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

Certificate of Analysis

For Laboratory Use Only

STORAGE CONDITIONS

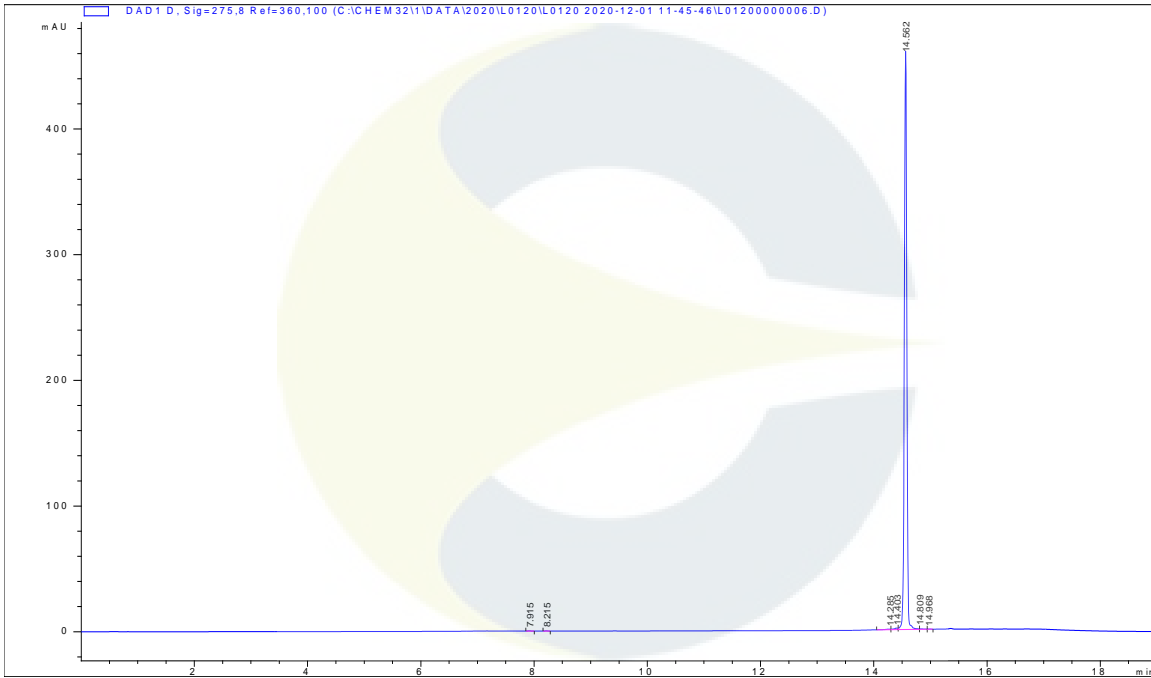
STORAGE	-20 °C in a dry place.
EXPIRATION DATE	11/2025 under the above conditions.

ANALYTICAL CONDITIONS

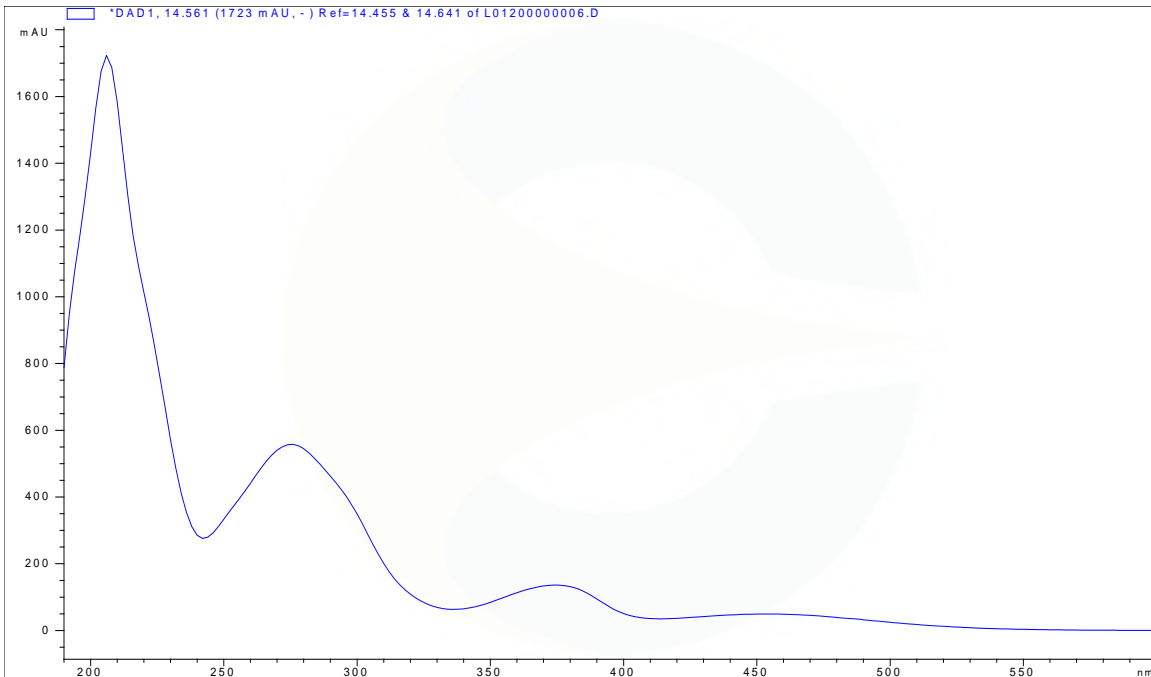
INSTRUMENT	AGILENT 1260 HPLC UV-VIS (DAD); AGILENT 1100 ION TRAP
COLUMN	Kinetex Phenyl-Hexyl 50 x 2.10 mm, 2.6 µm particle size
MOBILE PHASE	A – 0.1% Phosphoric acid in (97:2:1) Milli-Q water: Acetonitrile: Methanol B – Methanol, C – Acetonitrile 0% B and 0% C increasing to 10% B and 0% C over 2 min, then increasing to 15% B and 15% C over 4 min, then decreasing to 10% B and increasing to 20% C over 2 min, then decreasing to 5% B and increasing to 35% C over 4 min, then increasing to 10% B and 50% C over 0.5 min, then increasing to 55% C over 3 min, and decreasing to 0% B and 0% C over 0.5 min.
COLUMN TEMP.	25 °C
FLOW RATE	0.6 mL/minute
INJECTION VOL.	0.4 µL
INJECTION CONC.	1.2 mg/mL in Methanol
DETECTION	275 ± 4 nm

This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

HPLC CHROMATOGRAM OF THEAFLAVINE-3,3'-DIGALLATE (CDXA-16-012623)



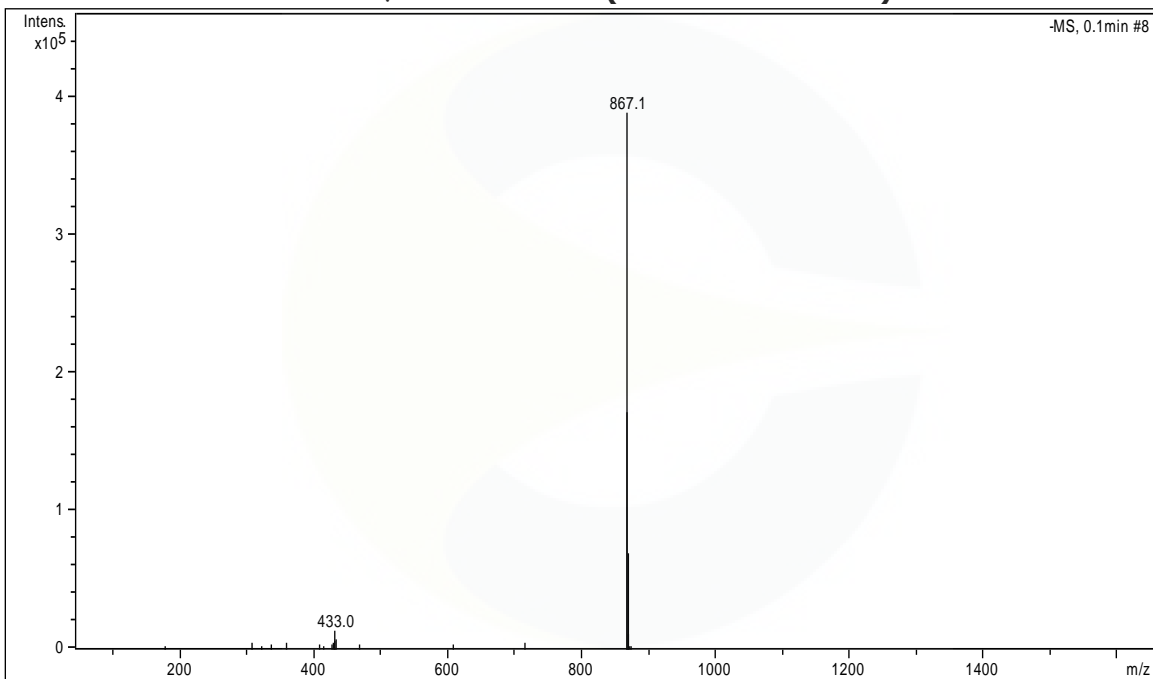
UV SPECTRUM AT 14.6 MINUTES



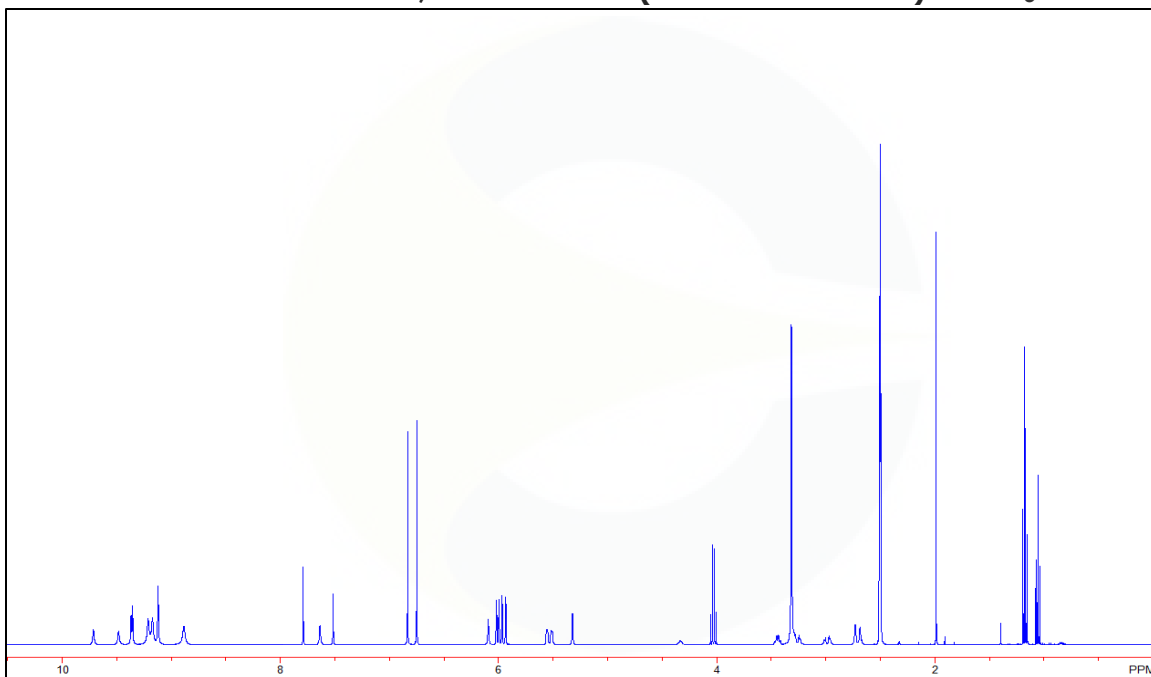
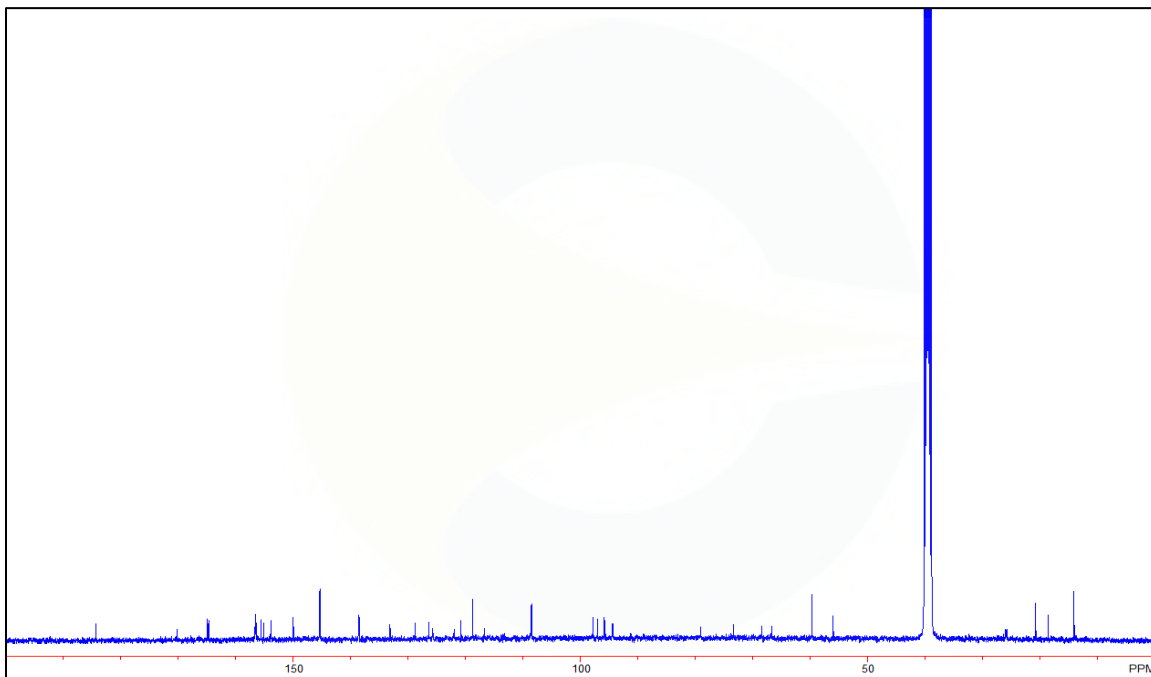
This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

Certificate of Analysis

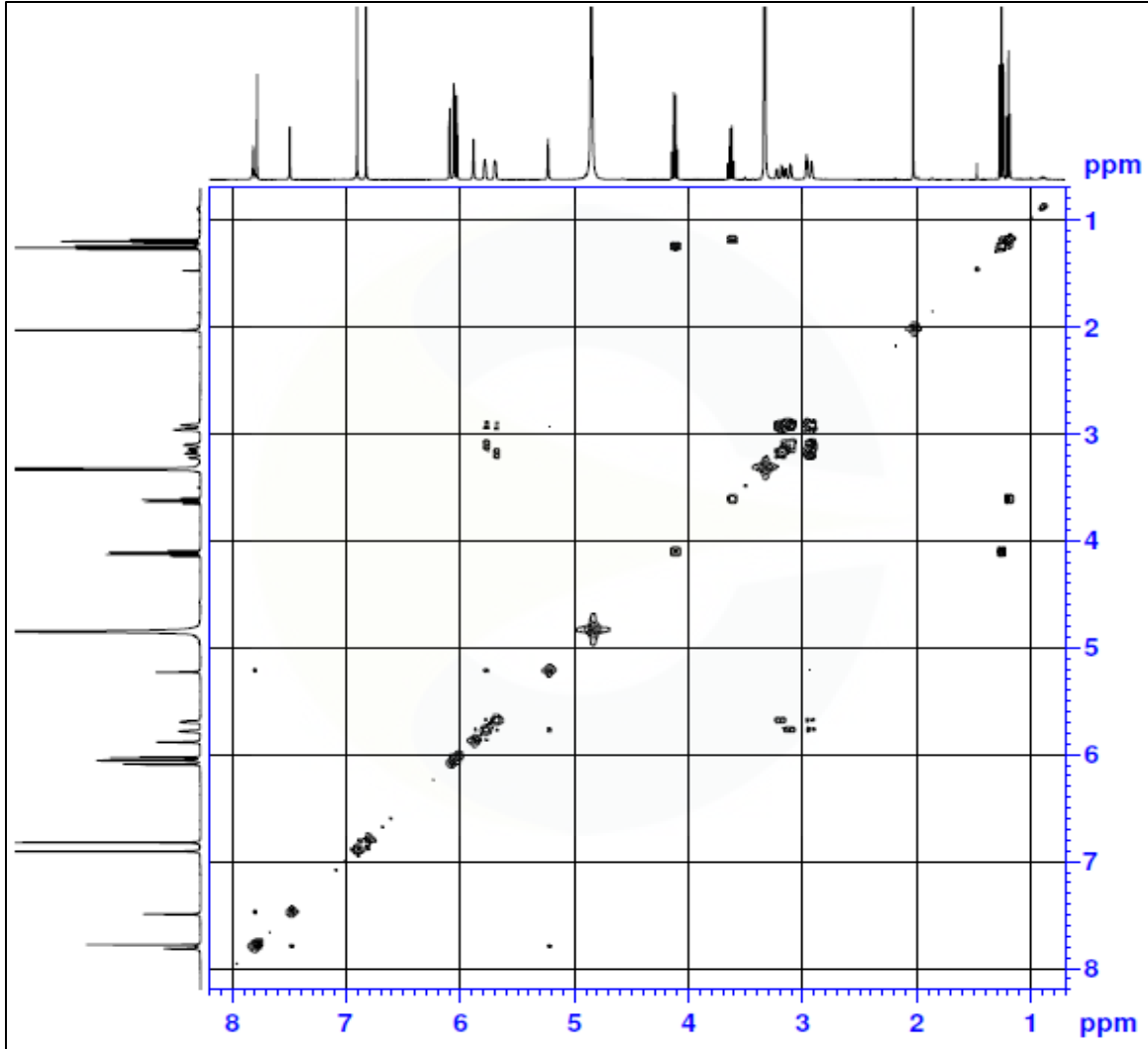
For Laboratory Use Only

HPLC CHROMATOGRAM OF DILUENT BLANK**MASS SPECTRUM OF THEAFLAVINE-3,3'-DIGALLATE (CDXA-16-012623)**

This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

¹H-NMR SPECTRUM OF THEAFLAVINE-3,3'-DIGALLATE (CDXA-16-012623) IN CD₃OD**¹³C-NMR SPECTRUM OF THEAFLAVINE-3,3'-DIGALLATE (CDXA-16-012623) IN CD₃OD**

This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

Certificate of Analysis For Laboratory Use Only
COSY-NMR SPECTRUM OF THEAFLAVINE-3,3'-DIGALLATE (CDXA-16-012623) IN CD₃OD

REVISION HISTORY

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	12/09/2016	New report
01	01/30/2018	Corrected HPLC chromatogram. Removed melting point.
02	12/10/2020	Updated expiration date, analytical results for KF and HPLC, analytical conditions, and chromatograms. Added RTECS.

This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.