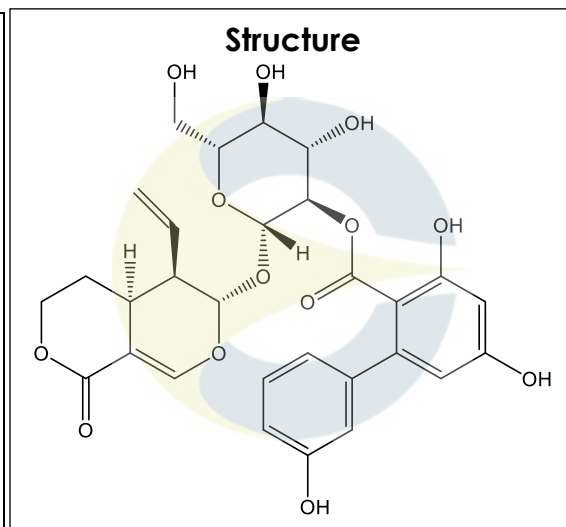


Certificate of Analysis
For Laboratory Use Only

PRODUCT NAME	Amarogentin
PART NUMBER	00001650
STANDARD TYPE	Primary (P)
LOT NUMBER	00001650-533
REPORT NUMBER	CDXA-RSS-235-02
SAMPLE NUMBER	CDXA-04-0533
DATE OF SAMPLE	08/11/2004
DATE OF RE-EVALUATION	09/11/2008(1 st); 01/11/2013(2 nd); 02/28/2017 (3 rd); 01/14/2021 (4 th)
DATE OF REPORT	02/10/2021



CHEMICAL NAMES	(4a <i>S</i> ,5 <i>R</i> ,6 <i>S</i>)-5-ethenyl-4,4a,5,6-tetrahydro-6-[[2-O-[(3,3',5-trihydroxy[1,1'-biphenyl]-2-yl)carbonyl]-β-D-glucopyranosyl]oxy]-1 <i>H</i> ,3 <i>H</i> -Pyrano[3,4- <i>c</i>]pyran-1-one
CHEMICAL FORMULA	C ₂₉ H ₃₀ O ₁₃
MOLECULAR WEIGHT (MW)	586.54
CHEMICAL FAMILY	Iridoids
CAS NUMBER	[21018-84-8]
EC#(EINECS)	639-021-0
RTECS	N/A

ANALYTICAL RESULTS

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	≥ 85%	89.5%
HPLC	0.700.10.2.METH22	≥ 90%	93.4%
NMR	0.700.12.4	Conforms to structure	Conforms to structure
Mass Spectrum	Direct Infusion, ESI (+)	Conforms	Conforms
Residual Solvent	CDXA-AM-001-00	NA	ND
Water	0.700.12.37	NA	4.2%
Appearance	NA	NA	Off-white powder

ADJUSTED PURITY: 89.5% IS BASED ON (100 - 0.0 SOLVENTS - 4.2 WATER) X 93.4% HPLC

STORAGE CONDITIONS

STORAGE	+4 °C in a dry place.
EXPIRATION DATE	01/2026 under the above conditions.

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.

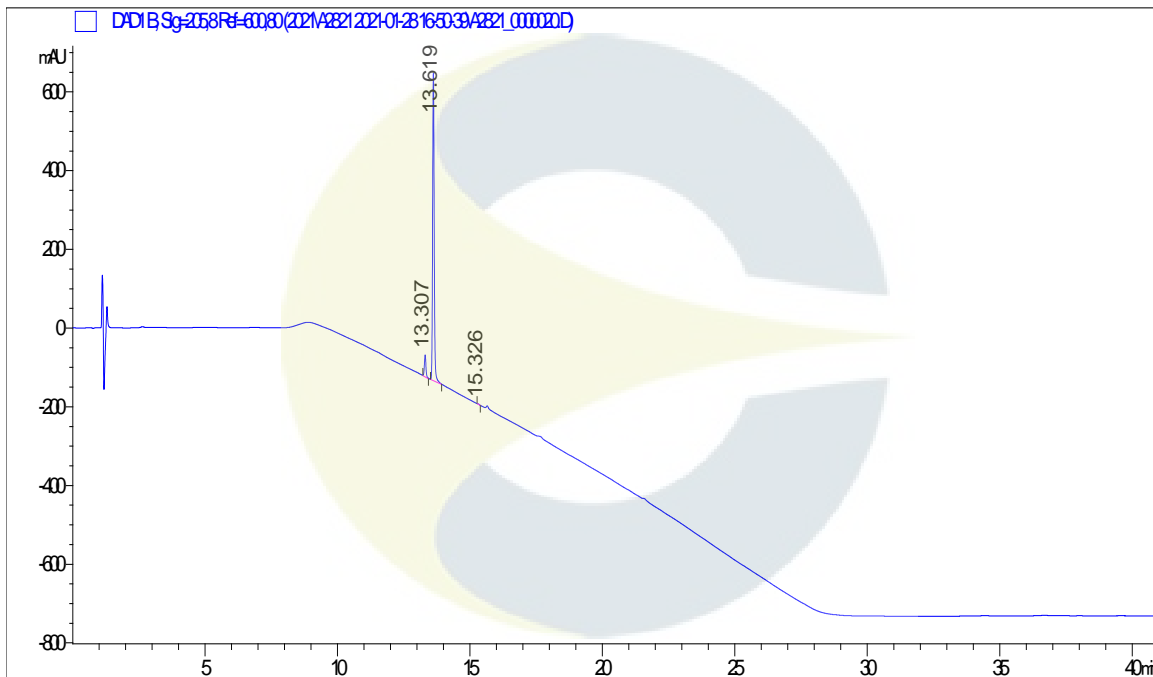
Certificate of Analysis

For Laboratory Use Only

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.	0.4 µL
INJECTION CONC.	1.1 mg/mL in Methanol
DETECTION	205 ± 4 nm

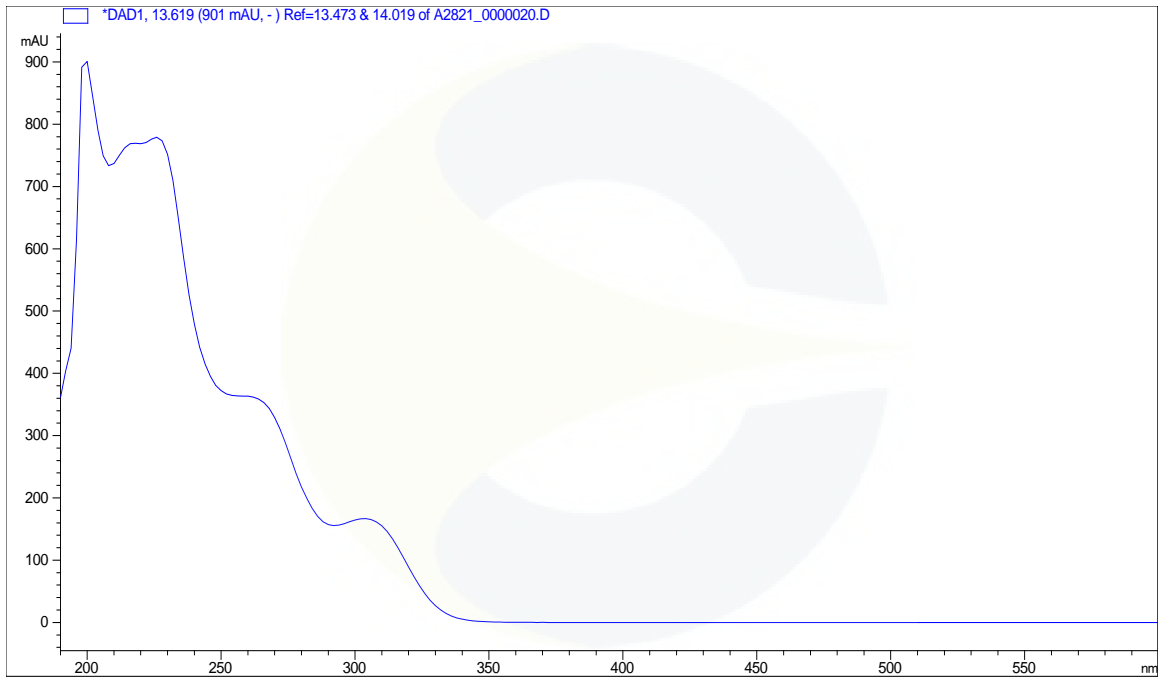
HPLC CHROMATOGRAM OF AMAROGENTIN (CDXA-04-0533)



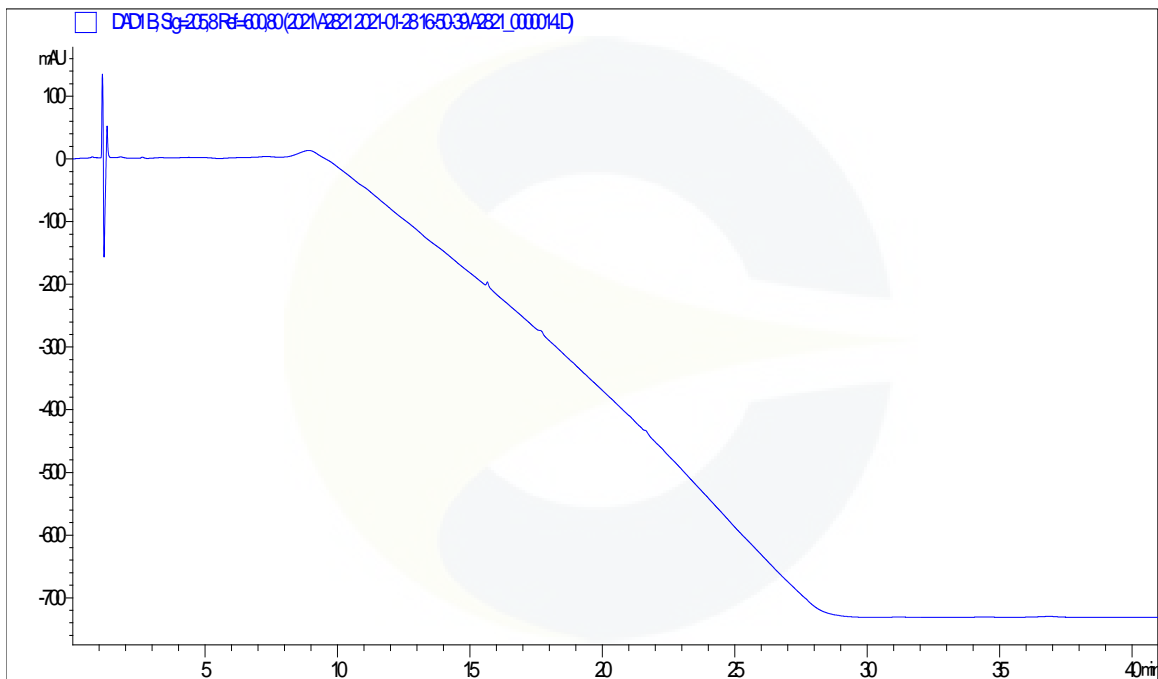
This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

Certificate of Analysis For Laboratory Use Only

UV SPECTRUM AT 13.6 MINUTES



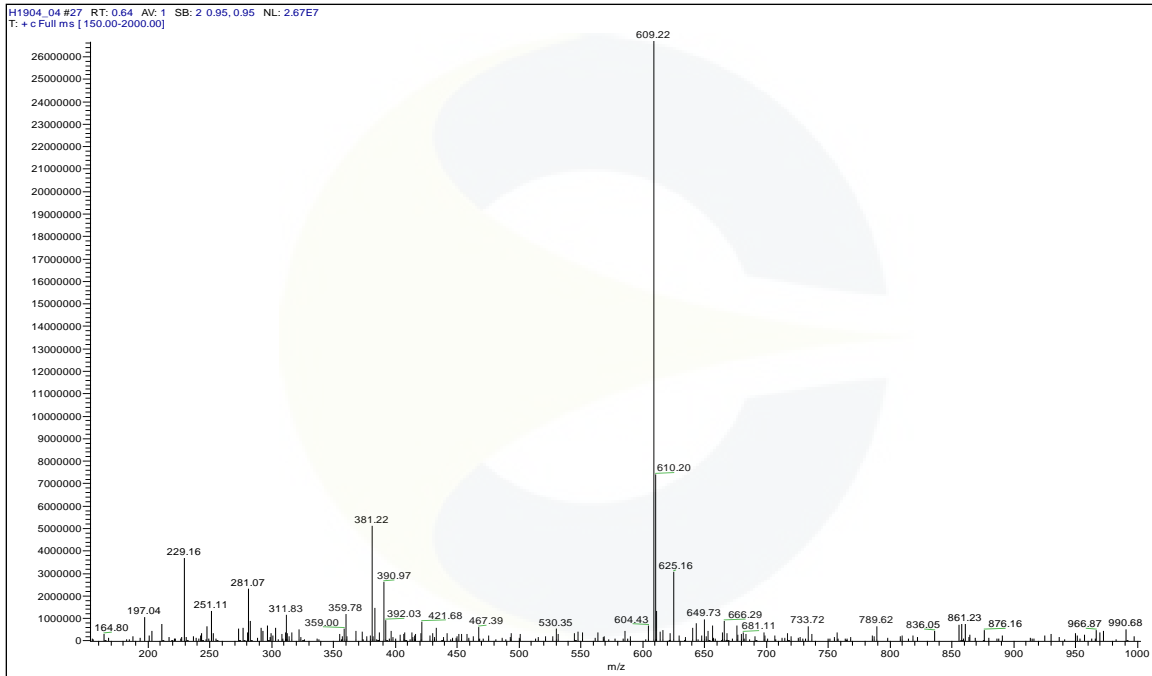
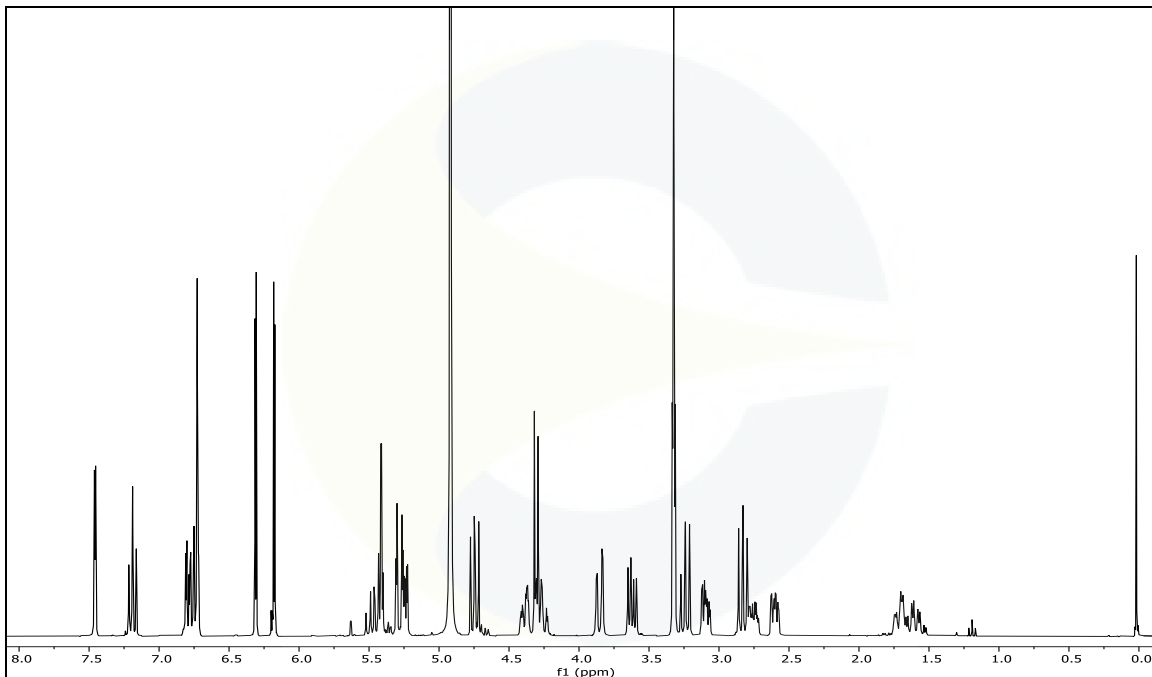
HPLC CHROMATOGRAM OF DILUENT BLANK



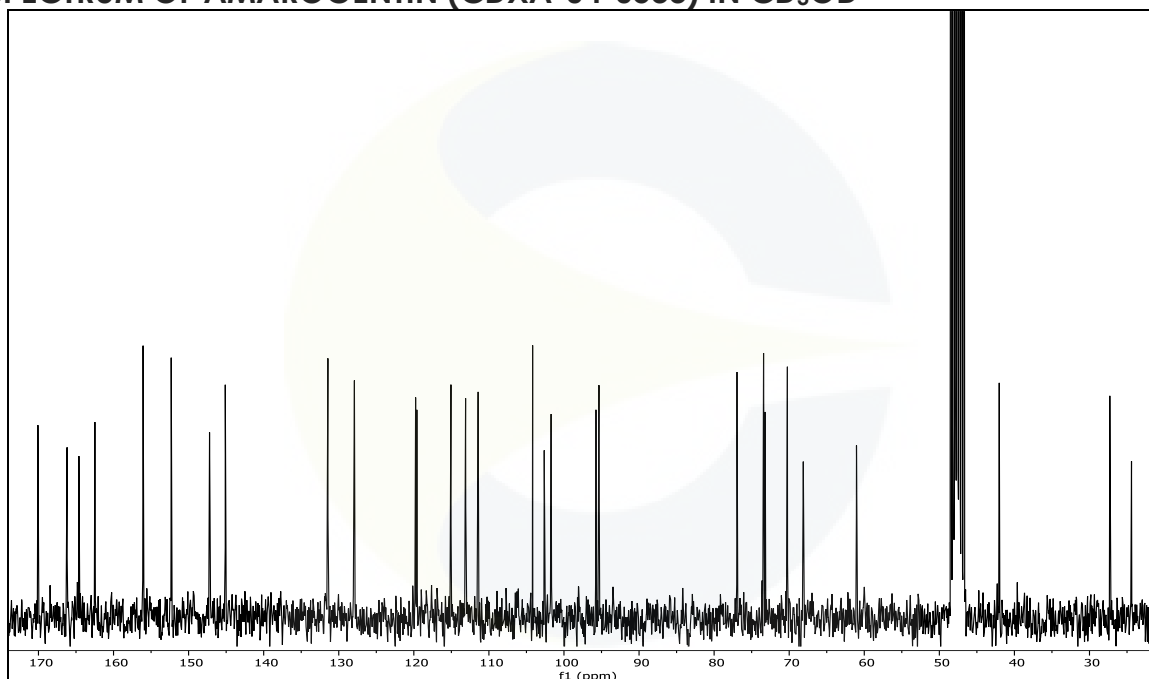
This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

10900 Wilshire Blvd., Suite 600, Los Angeles, CA 90024 | T: +1 949-419-0288 | F: +1 949-419-0294 | www.chromadex.com
Laboratory address: 1751 S. Fordham St., Suite 350, Longmont, CO 80503

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com

MASS SPECTRUM OF AMAROGENIN (CDXA-04-0533)

¹H-NMR SPECTRUM OF AMAROGENIN (CDXA-04-0533) IN CD₃OD


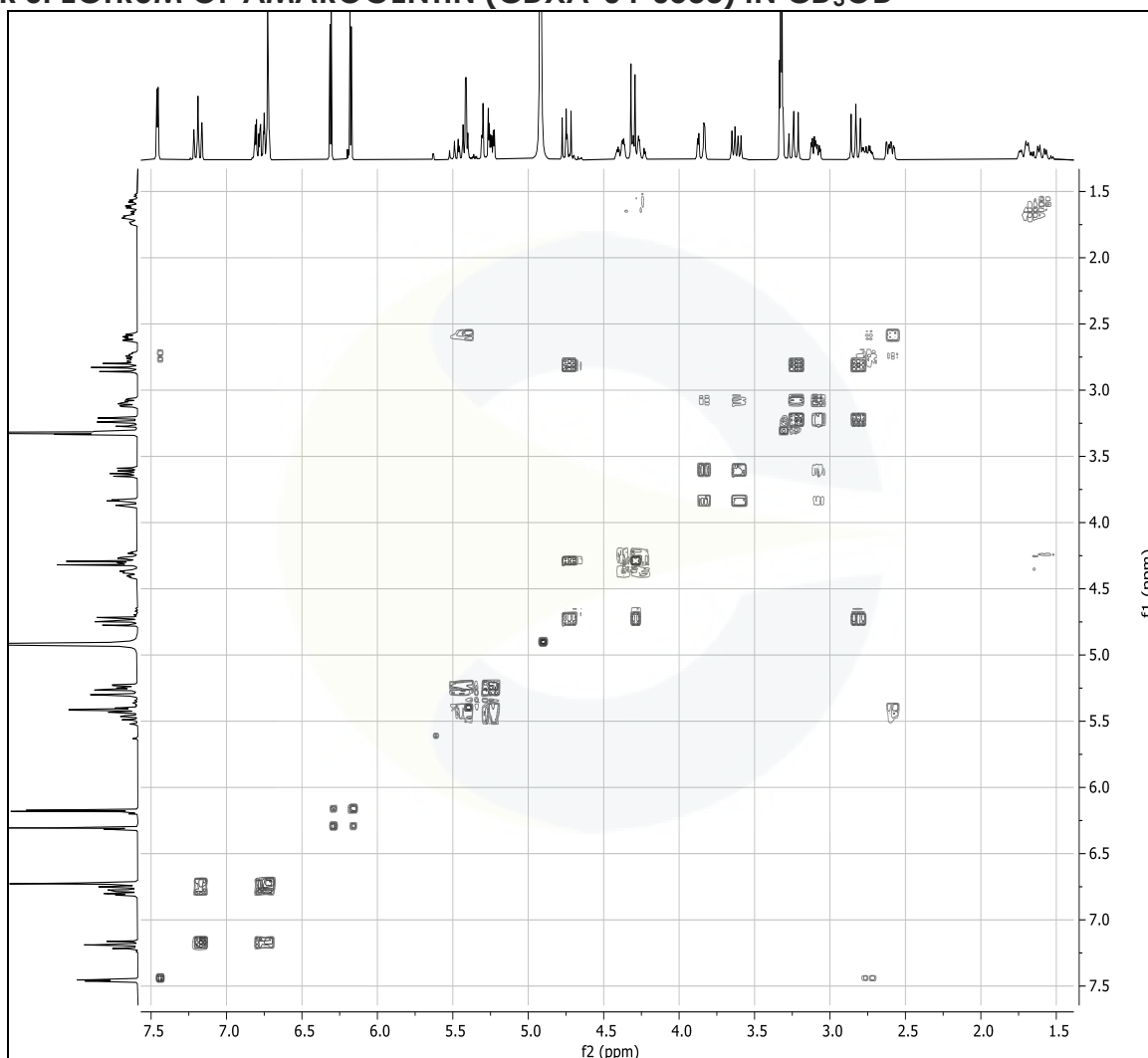
This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

¹³C-NMR SPECTRUM OF AMAROAGENTIN (CDXA-04-0533) 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.

10900 Wilshire Blvd., Suite 600, Los Angeles, CA 90024 | T: +1 949-419-0288 | F: +1 949-419-0294 | www.chromadex.com
Laboratory address: 1751 S. Fordham St., Suite 350, Longmont, CO 80503

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com

COSY-NMR SPECTRUM OF AMAROGENIN (CDXA-04-0533) IN CD₃OD

REVISION HISTORY

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	01/17/2013	New report
01	03/21/2017	Passed third re-evaluation by HPLC, KF. Updated expiration date, chemical names, melting point, analytical method, analytical conditions, analytical chromatograms, and results.
02	02/10/2021	Material passed fourth re-evaluation by HPLC, KF, and NMR. Updated expiration date, analytical results, analytical conditions, chromatograms, and NMR spectra. Removed melting point and added EINECS.

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.