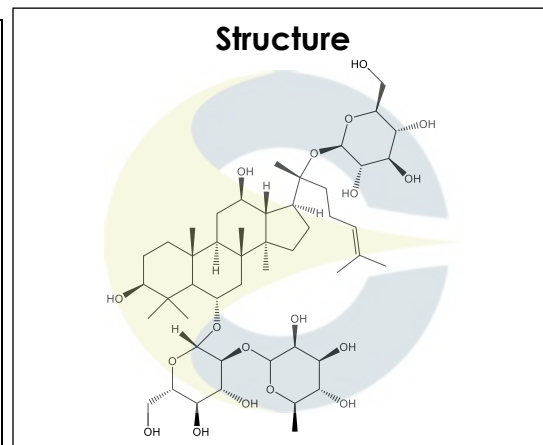


Certificate of Analysis
For Laboratory Use Only

PRODUCT NAME	Ginsenoside Re
PART NUMBER	00007210
STANDARD TYPE	Primary (P)
LOT NUMBER	00007210-0201
REPORT NUMBER	CDXA-RSS-8957-00
SAMPLE NUMBER	CDXP-20-00298
DATE OF SAMPLE	04/29/2020
DATE OF REPORT	06/04/2020



CHEMICAL NAMES	(3β,6α,12β)-20-(β-D-glucopyranosyloxy)-3,12-dihydroxydammar-24-en-6-yl-2-O-(6-deoxy-α-L-mannopyranosyl)-β-D-glucopyranoside; Panaxoside Re; Sanchinoside Re; Chikusetsusaponin IVc; Ginsenoside B2
CHEMICAL FORMULA	C ₄₈ H ₈₂ O ₁₈
MOLECULAR WEIGHT (MW)	947.15
CHEMICAL FAMILY	Saponins
CAS NUMBER	[52286-59-6]
EC#(EINECS)	257-814-6
RTECS	LY9536700

ANALYTICAL RESULTS

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	NA	89.8%
HPLC	0.700.10.2.METH102	NA	96.0%
NMR	0.700.12.4	Conforms to structure	Conforms to structure
Mass Spectrum	0.700.12.27	Conforms	Conforms
Residual Solvent*	USP <467>	NA	EtOH – 0.1%
Water	0.700.12.37	NA	6.4%
Appearance	NA	NA	White powder

*Testing performed at an ISO 17025 accredited subcontracted laboratory.
 ADJUSTED PURITY: 89.8% IS BASED ON (100 - 0.1 SOLVENTS - 6.4 WATER) X 96.0% HPLC

STORAGE CONDITIONS

STORAGE	Room Temperature in a dry place.
EXPIRATION DATE	04/2025 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.

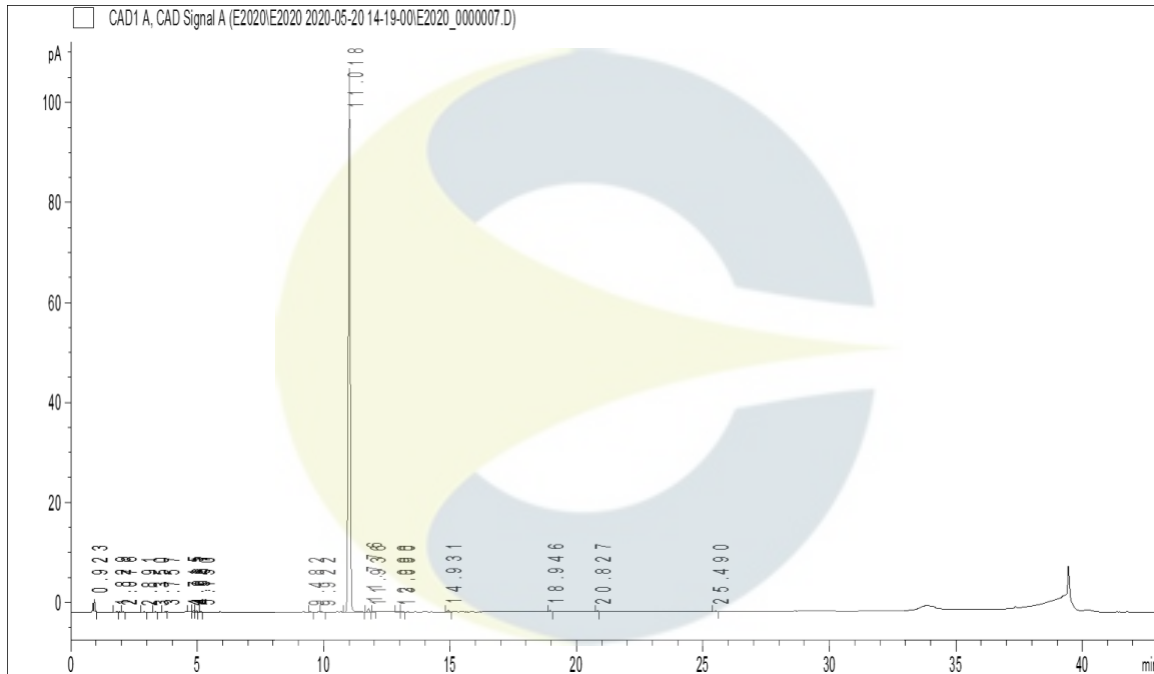
Certificate of Analysis

For Laboratory Use Only

ANALYTICAL CONDITIONS

INSTRUMENT	AGILENT 1260 HPLC UV-VIS (DAD) CONNECTED TO DIONEX CORONA VEO CHARGED AEROSOL DETECTOR (CAD); AB-SCIEX 6600 TRIPLE TOF
COLUMN	Phenomenex Kinetex C18, 150 x 4.60 mm, 2.6 µm particle size
MOBILE PHASE	A - Milli-Q water, B - Acetonitrile; Start at 15% B, increase to 30% B over 15 minutes, increase to 32% B over one minute, increase to 38% B over 3 minutes, increase to 43% B over 5 minutes, increase to 55% B over 3 minutes, increase to 65% B over 4 minutes, increase to 70% B over 4 minutes and increase to 90% B over 3 minutes. Then decrease to 15% B over one minute and hold for 4 minutes.
COLUMN TEMP.	40 °C
FLOW RATE	1.5 mL/minute
INJECTION VOL.	10 µL
INJECTION CONC.	1.1 mg/mL in Methanol
DETECTION	CAD

HPLC CHROMATOGRAM OF GINSENOSE RE (CDXP-20-00298)

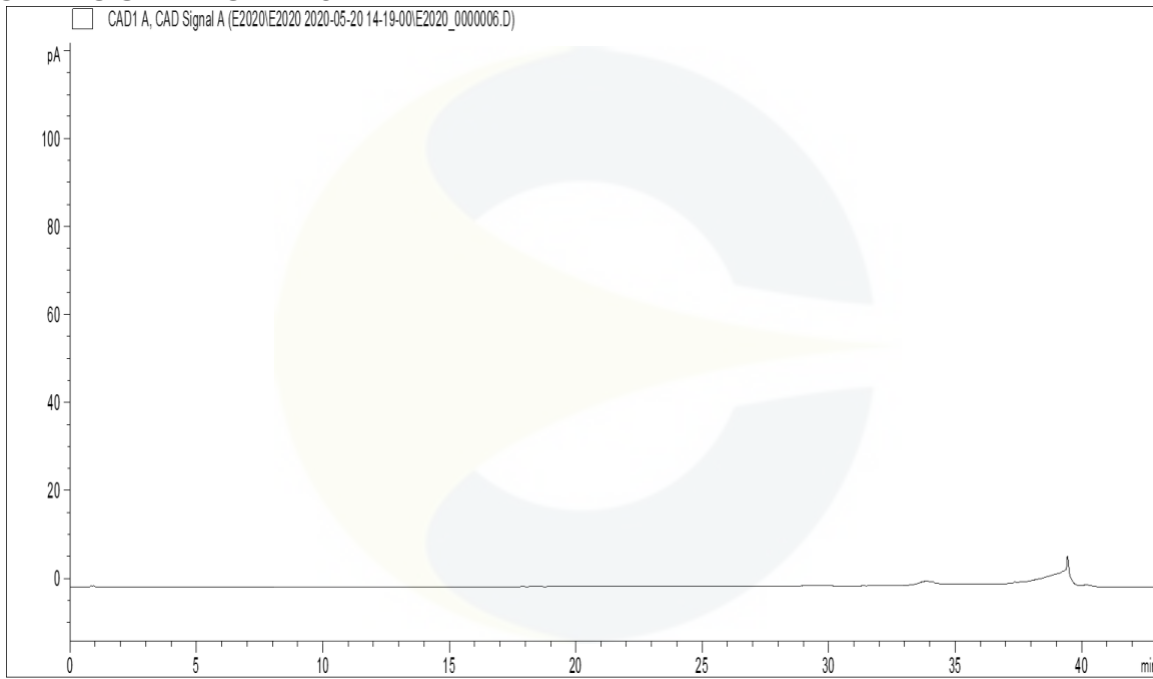


This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

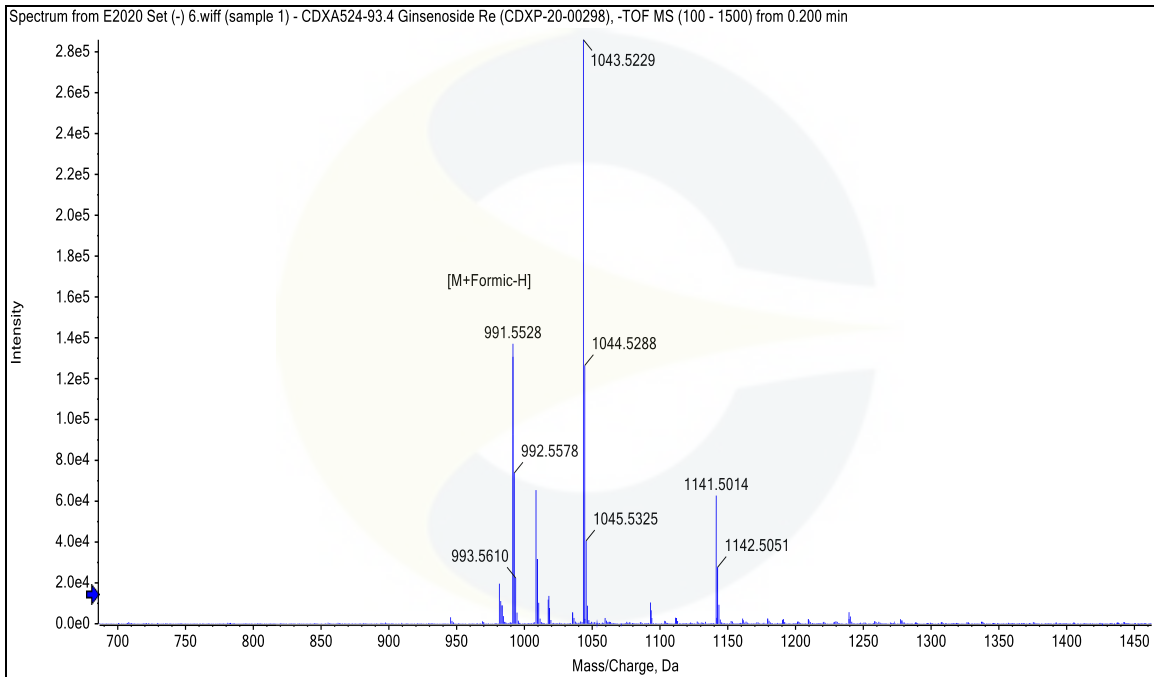
Certificate of Analysis

For Laboratory Use Only

HPLC CHROMATOGRAM OF DILUENT BLANK



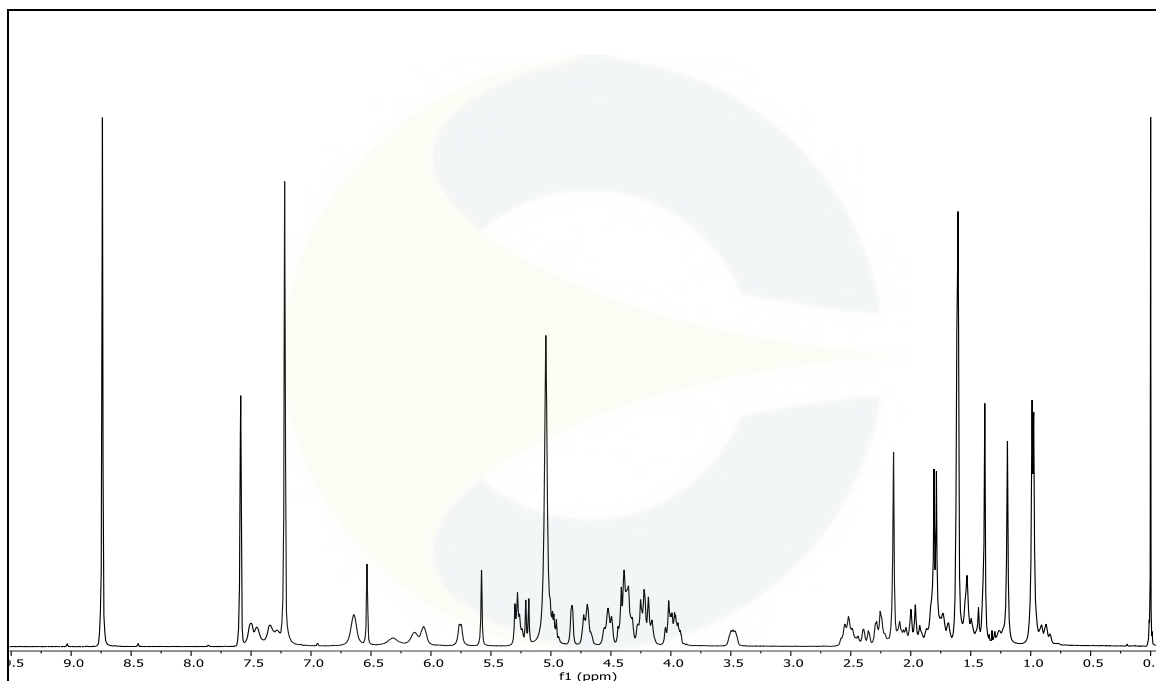
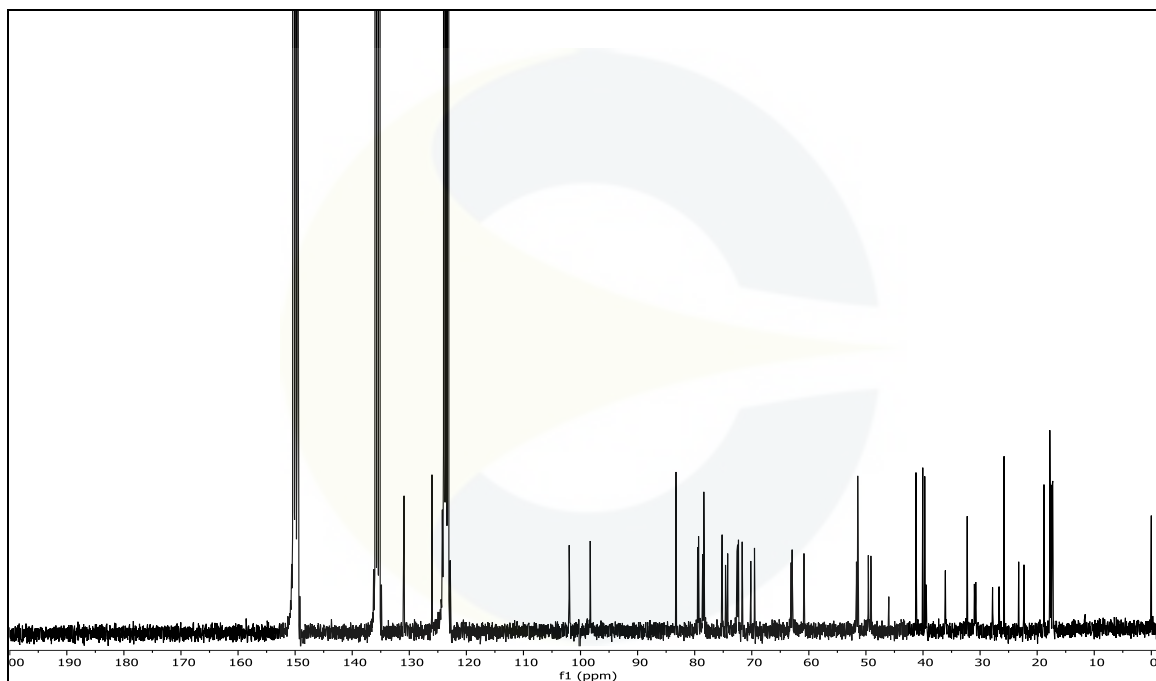
MASS SPECTRUM OF GINSENOSE RE (CDXP-20-00298)



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

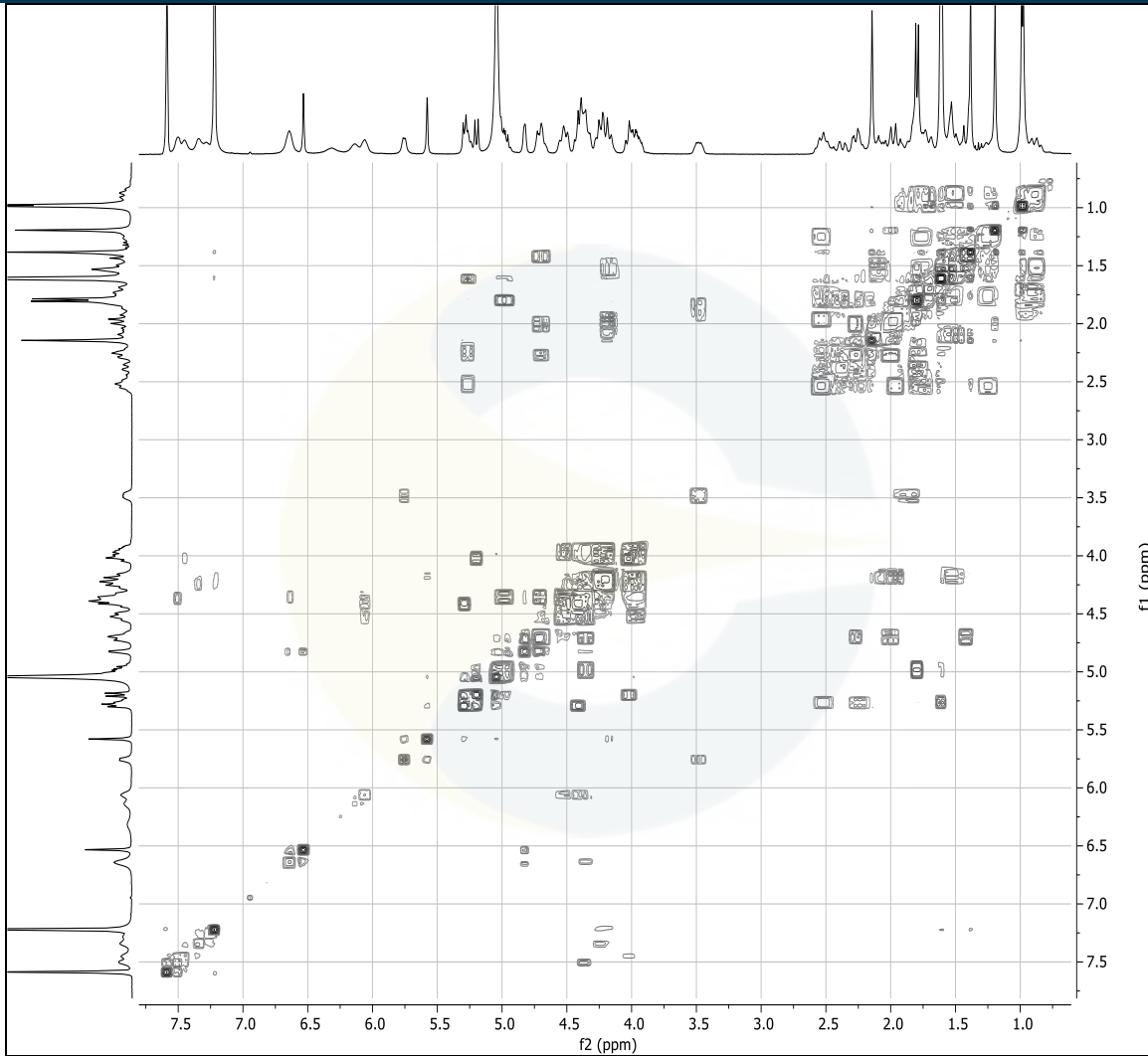
Certificate of Analysis
For Laboratory Use Only
¹H-NMR SPECTRUM OF GINSENOSE RE (CDXP-20-00298) IN PYRIDINE – d₅ + TMS

¹³C-NMR SPECTRUM GINSENOSE RE (CDXP-20-00298) IN PYRIDINE – d₅ + TMS

COSY-NMR SPECTRUM OF GINSENOSE RE (CDXP-20-00298) IN PYRIDINE – d₅ + TMS

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

Certificate of Analysis

For Laboratory Use Only



REVISION HISTORY

Revision History	Date of Revision	Document/Changes
00	06/04/2020	New report

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