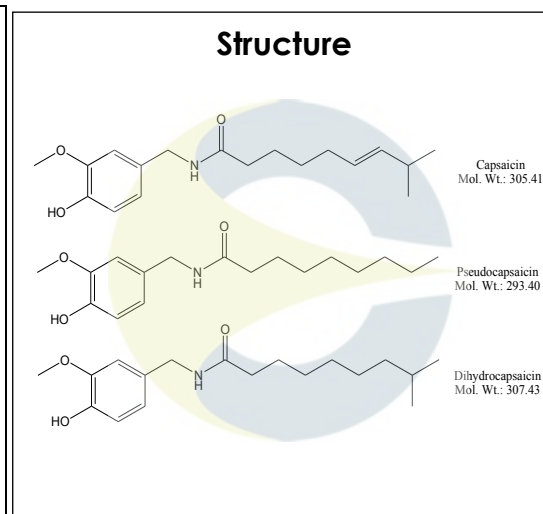


Certificate of Analysis
For Laboratory Use Only

PRODUCT NAME	Capsaicin Mixture
PART NUMBER	00003131
STANDARD TYPE	Primary (P)
LOT NUMBER	00003131-617
REPORT NUMBER	CDXA-RSS-879-02
SAMPLE NUMBER	CDXA-06-0547
DATE OF SAMPLE	05/05/2006
DATE OF RE-EVALUATION	06/12/2012 (1 st); 07/06/2016(2 nd); 07/13/2020 (3 rd)
DATE OF REPORT	08/04/2020



CHEMICAL NAMES	Mixture of: A – Capsaicin, B – Pseudocapsaicin, C – Dihydrocapsaicin
CHEMICAL FORMULA	A – C ₁₈ H ₂₇ NO ₃ , B – C ₁₇ H ₂₇ NO ₃ , C – C ₁₈ H ₂₉ NO ₃
MOLECULAR WEIGHT (MW)	A – 305.42, B – 293.40, C – 307.43
CHEMICAL FAMILY	Alkaloids
CAS NUMBER	A – [404-86-4], B – [2444-46-4], C – [19408-84-5]
EC#(EINECS)	A – 206-969-8, B – 219-484-1, C – 606-308-7
RTECS	A – RA8530000, B – RA5955000, C – RA5998000

ANALYTICAL RESULTS

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	NA	95.2% Total Capsaicins
HPLC	0.700.10.2.METH22	NA	Capsaicin – 63.6% Pseudocapsaicin – 4.6% Dihydrocapsaicin – 27.0%
NMR	NA	Conforms to structure	Conforms to structure
Mass Spectrum	Direct Infusion, ESI (+)	Conforms	Conforms
Residual Solvent	CDXA-AM-001-04	NA	ND
Water	0.700.12.37	NA	ND
Appearance	NA	NA	White powder

ADJUSTED PURITY: 95.2% IS BASED ON (100 - 0.0 SOLVENTS - 0.0 WATER) X 95.2% 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 Room Temperature in a dry place.
EXPIRATION DATE 07/2025 under the above conditions.

Elizabeth Hughes
 Quality Assurance
 Specialist Assistant
 Designee of QA
 Management

Digitally signed by
 Elizabeth Hughes
 Date: 2020.08.04
 13:04:34 -06'00'

ANALYTICAL CONDITIONS

INSTRUMENT AGILENT 1260 HPLC UV-VIS (DAD); THERMO-FINNIGAN LCQ-DECA ION TRAP MASS SPECTROMETER

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

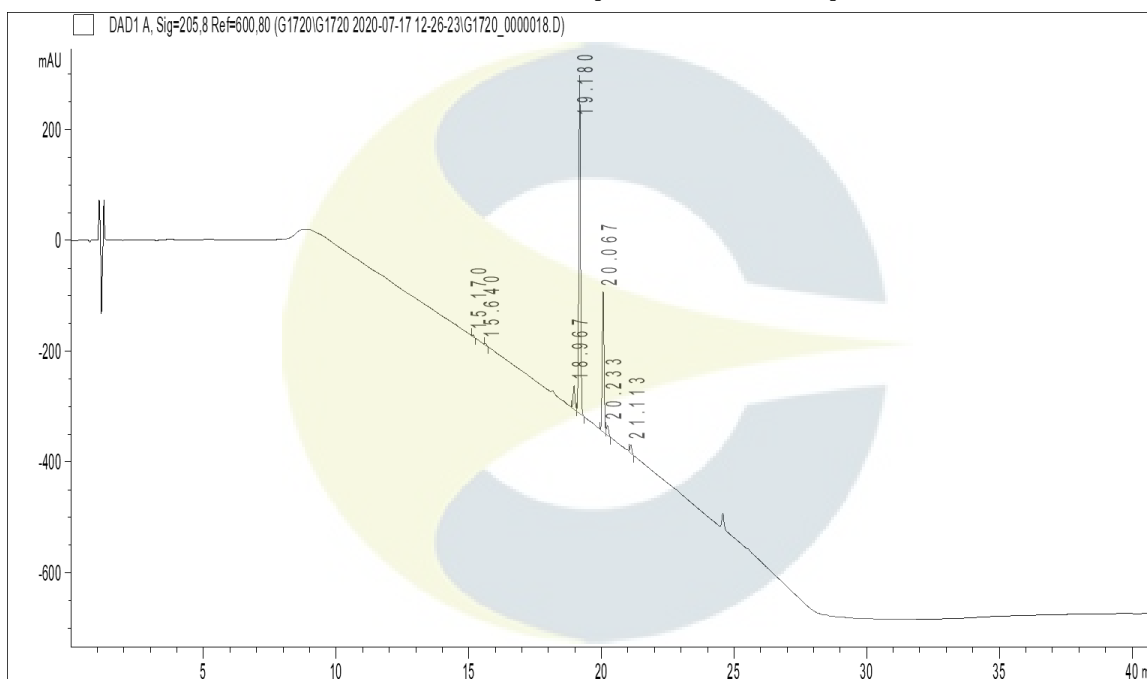
FLOW RATE 0.4 mL/minute

INJECTION VOL. 0.2 µL

INJECTION CONC. 1.3 mg/mL in Methanol

DETECTION 205 ± 4 nm

HPLC CHROMATOGRAM OF CAPSAICIN MIXTURE (CDXA-06-0547)

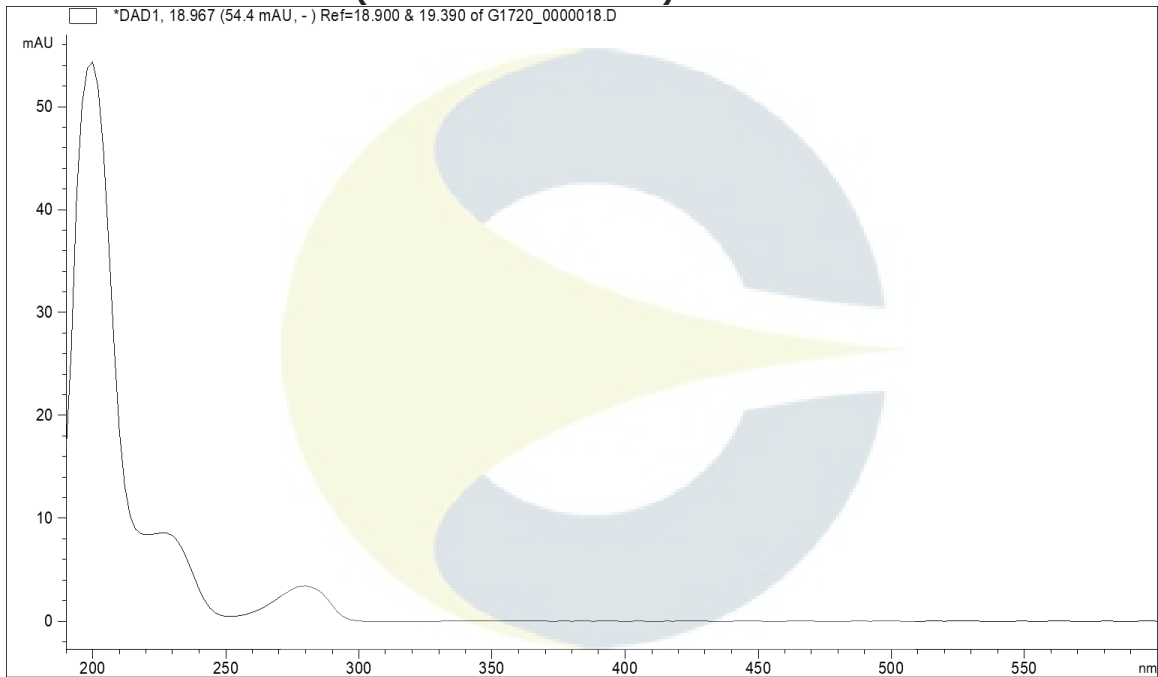


This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

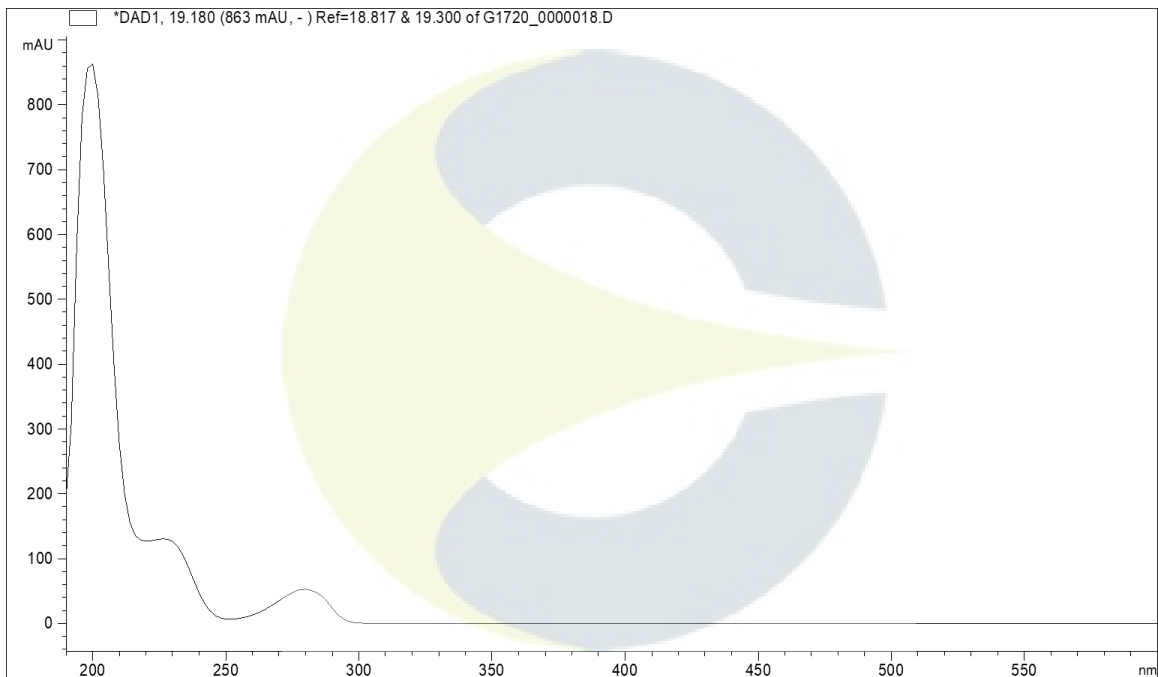
Certificate of Analysis

For Laboratory Use Only

UV SPECTRUM AT RT 19.0 MINUTES (PSEUDOCAPSAICIN)



UV SPECTRUM AT RT 19.2 MINUTES (CAPSAICIN)



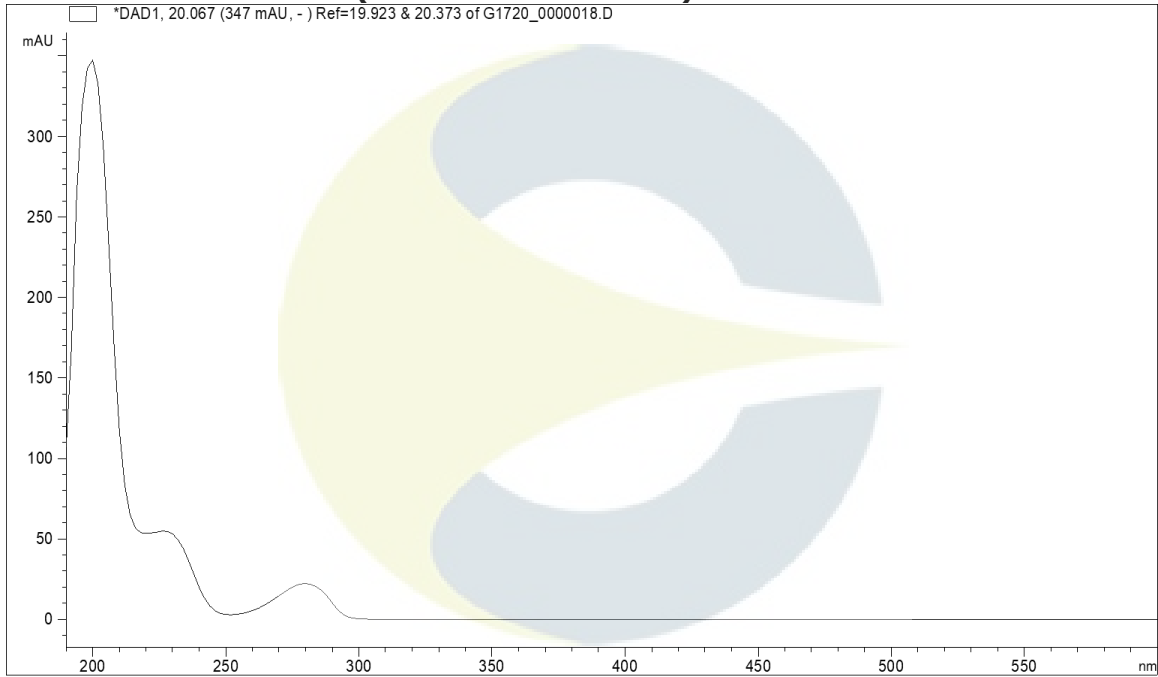
This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

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

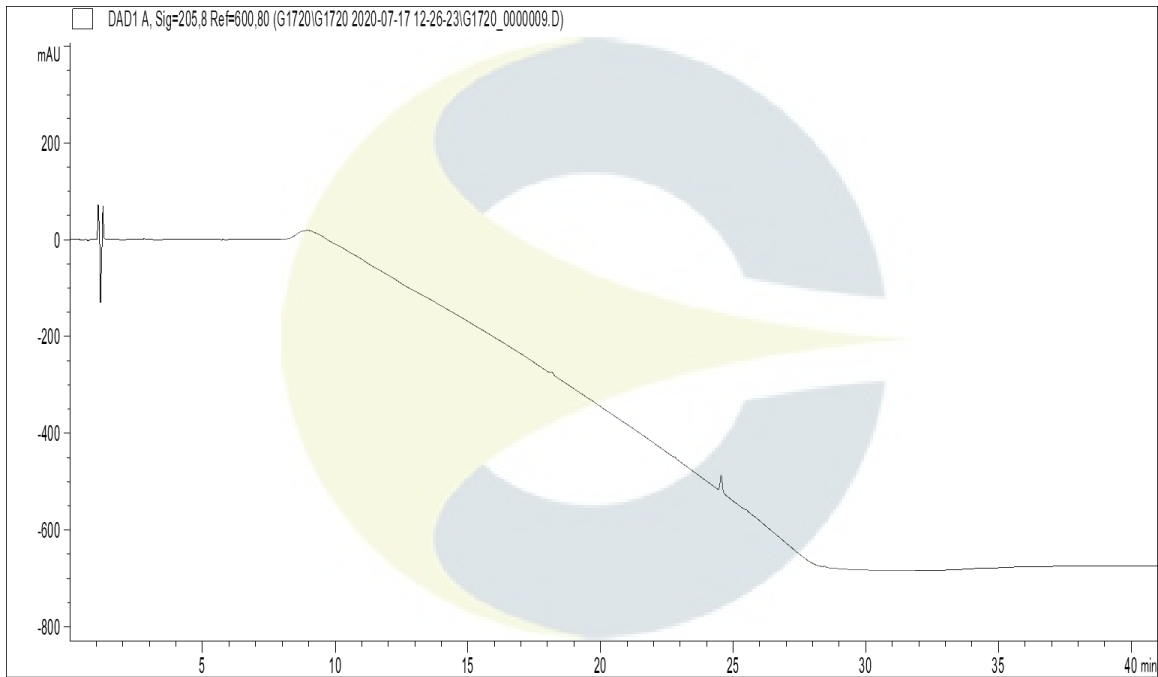
India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com

Certificate of Analysis For Laboratory Use Only

UV SPECTRUM AT RT 20.1 MINUTES (DIHYDROCAPSAICIN)



HPLC CHROMATOGRAM OF DILUENT BLANK



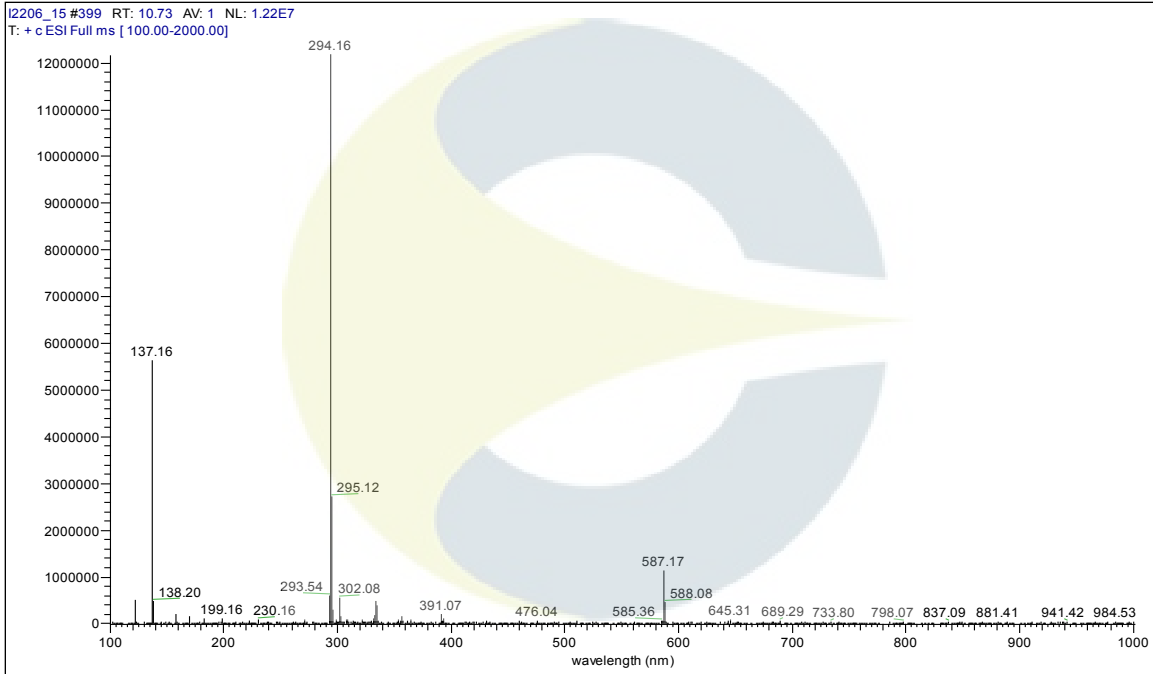
This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

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

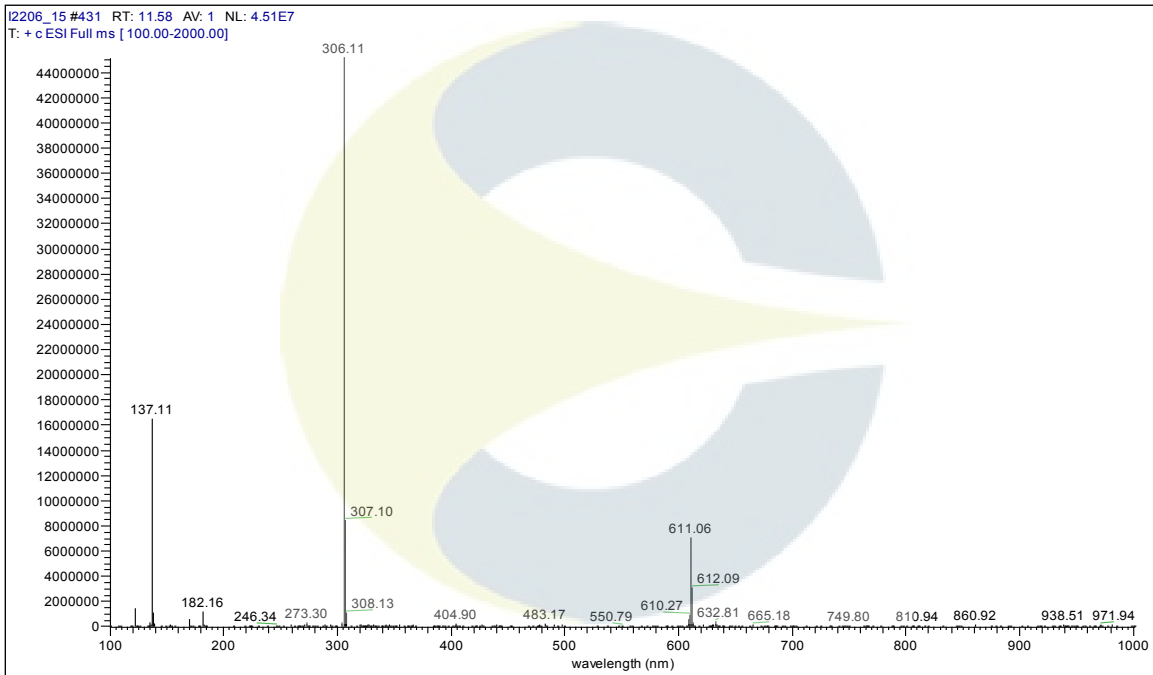
India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com

Certificate of Analysis For Laboratory Use Only

MASS SPECTRUM OF PSEUDOCAPSAICIN (CDXA-06-0547)



MASS SPECTRUM OF CAPSAICIN (CDXA-06-0547)



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.

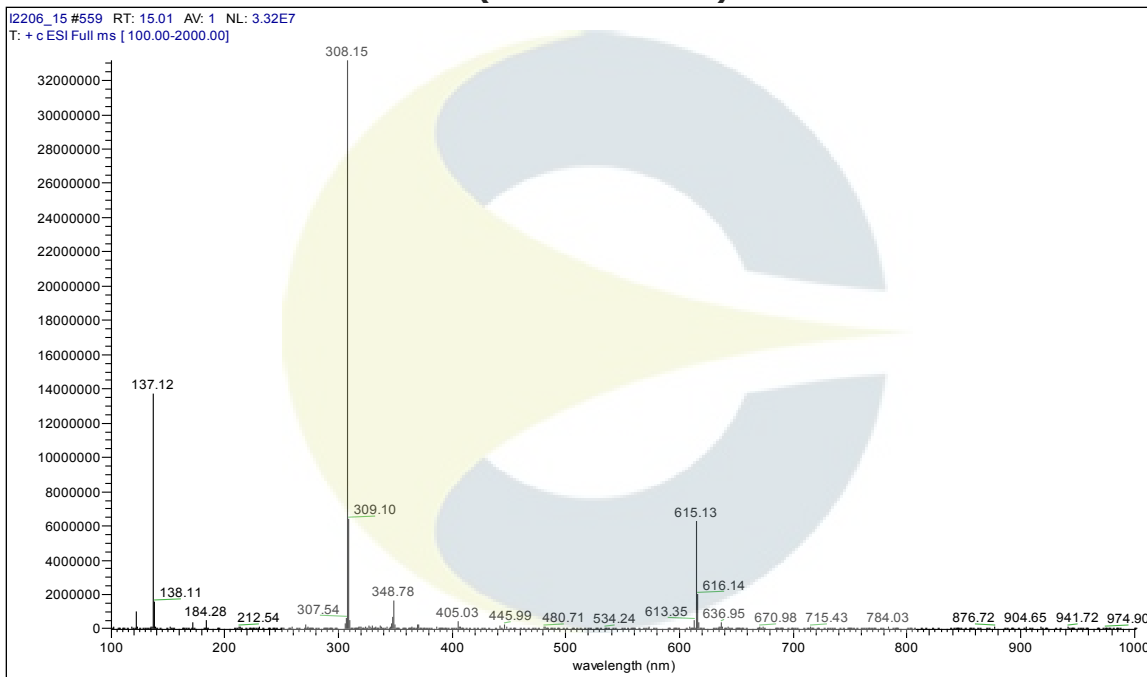
10900 Wilshire Blvd., Suite 600, Los Angeles, CA 90024 | T: +1 949-419-0288 | F: +1 949-419-0294 | www.chromadex.com
Laboratory address: 1751 S. Fordham St., Suite 350, Longmont, CO 80503

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

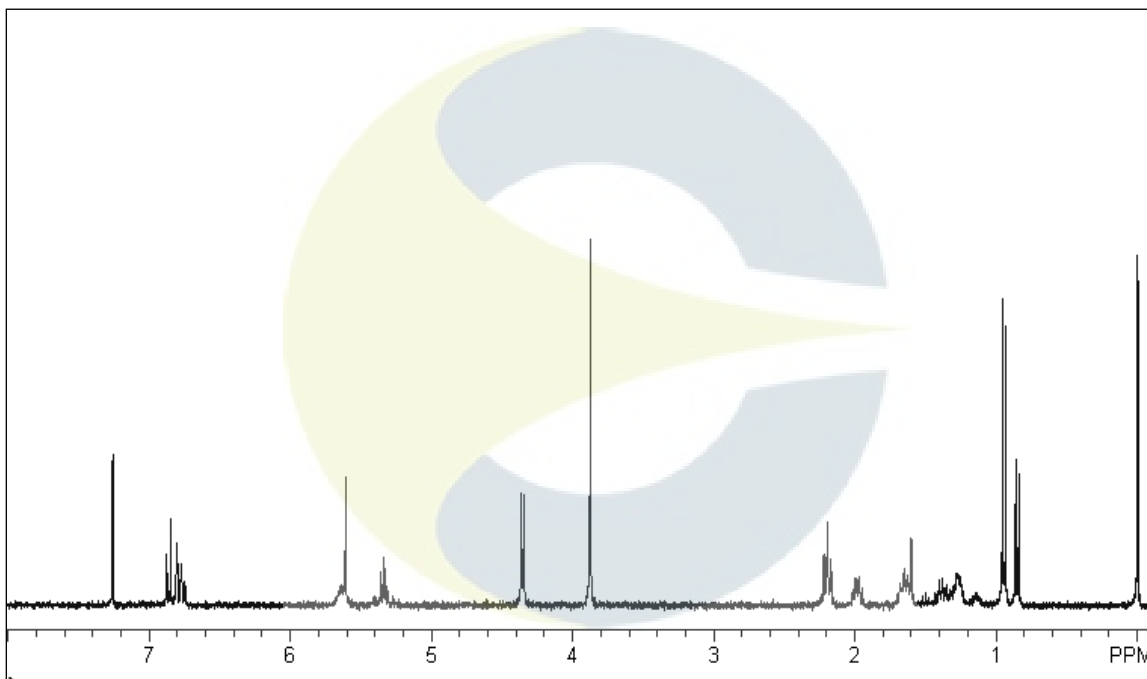
Certificate of Analysis

For Laboratory Use Only

MASS SPECTRUM OF DIHYDROCAPSAICIN (CDXA-06-0547)



¹H-NMR SPECTRUM OF CAPSAICIN MIXTURE (CDXA-06-0547) IN CDCl₃



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

REVISION HISTORY

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	07/26/2012	New report and first re-evaluation
01	08/29/2016	Passed second re-evaluation by HPLC, KF. Updated expiration date.
02	08/04/2020	Passed third re-evaluation by HPLC, KF. Updated analytical results, expiration date, analytical conditions, chromatographs, and removed melting point Added EINECS for dihydrocapsaicin.

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.