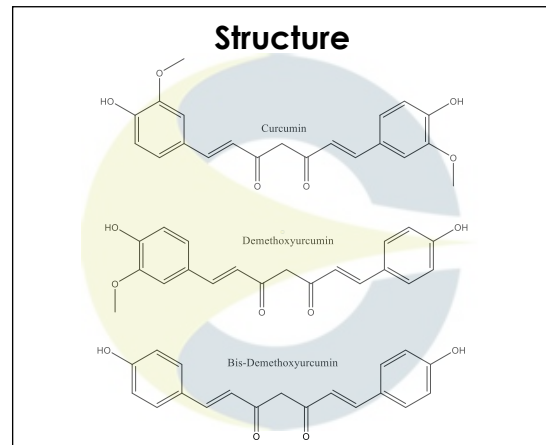


**Certificate of Analysis**
*For Laboratory Use Only*

<b>PRODUCT NAME</b>	Curcuminoids
<b>PART NUMBER</b>	00003928
<b>STANDARD TYPE</b>	Primary (P)
<b>LOT NUMBER</b>	00003928-822
<b>REPORT NUMBER</b>	CDXA-RSS-9925-00
<b>SAMPLE NUMBER</b>	CDXP-22-00794
<b>DATE OF SAMPLE</b>	08/30/2022
<b>DATE OF REPORT</b>	09/27/2022



<b>CHEMICAL NAMES</b>	NA
<b>CHEMICAL FORMULA</b>	Curcumin – C <sub>21</sub> H <sub>20</sub> O <sub>6</sub> ; Demethoxycurcumin (DMC) – C <sub>20</sub> H <sub>18</sub> O <sub>5</sub> ; Bisdemethoxycurcumin (BDMC) – C <sub>19</sub> H <sub>16</sub> O <sub>4</sub>
<b>MOLECULAR WEIGHT (MW)</b>	Curcumin - 368.38; Demethoxycurcumin – 338.35; Bisdemethoxycurcumin – 308.33
<b>CHEMICAL FAMILY</b>	Curcuminoids
<b>CAS NUMBERS</b>	[458-37-7], [22608-11-3], [33171-05-0]
<b>EC#(EINECS)</b>	207-280-5 (Curcumin); 663-429-8 (Demethoxycurcumin); 881-423-5 (Bisdemethoxycurcumin)
<b>RTECS</b>	MI5230000 (Curcumin); NA (Demethoxycurcumin); NA (Bisdemethoxycurcumin)

**ANALYTICAL RESULTS**

TEST	METHOD	SPECIFICATION	RESULT
Adjusted Purity	NA	≥ 85%	99.2%
HPLC	0.700.10.2.METH22	≥ 90%	Curcumin – 75.4% Demethoxycurcumin – 20.7% Bisdemethoxycurcumin – 3.8% Total - 99.9%
NMR	0.700.12.4	Conforms to structure	Conforms to structure
Mass Spectrum	0.700.12.27	Conforms	Conforms
Residual Solvent*	USP <467>	NA	Ethyl Acetate – 1900 ppm 1-Butanol – 558 ppm
Water	0.700.12.37	NA	0.4%
Appearance	NA	NA	Orange powder

\*Testing performed at an ISO 17025 accredited subcontracted laboratory.

ADJUSTED PURITY: 99.2% IS BASED ON (100 - 0.3 SOLVENTS - 0.4 WATER) X 99.9% 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	08/2027 under the above conditions.

## ANALYTICAL CONDITIONS

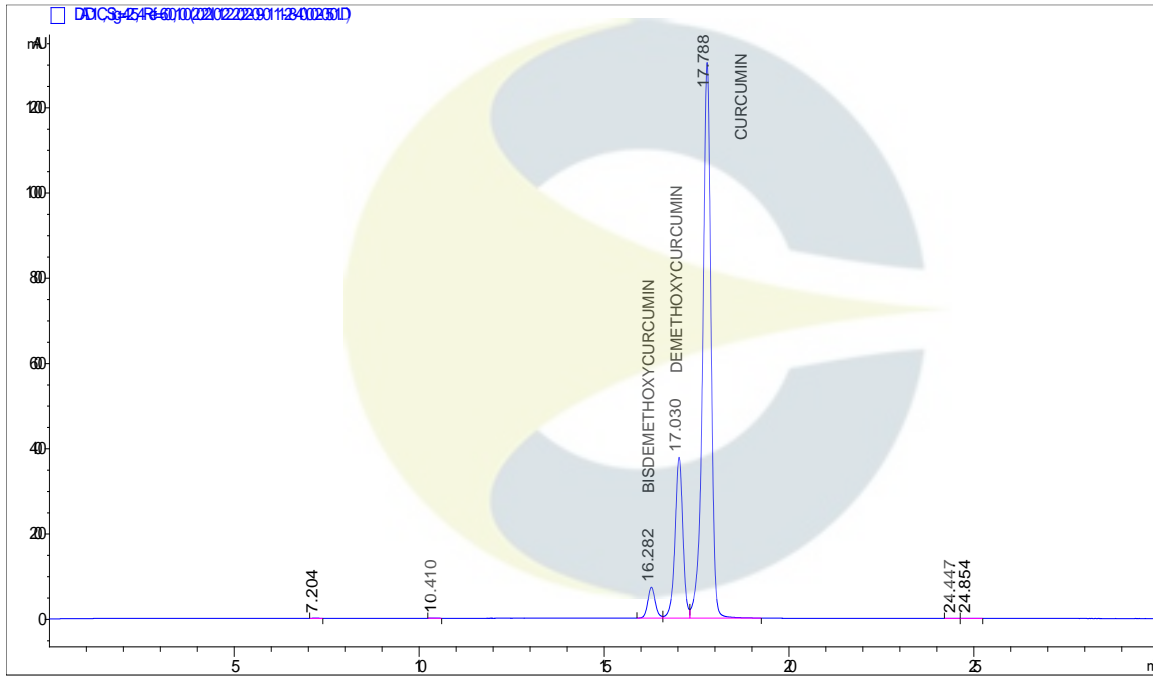
INSTRUMENT	AGILENT 1260 HPLC UV-VIS (DAD); AB-SCIEX 6600 TRIPLE TOF
COLUMN	Phenomenex Luna C18(2) 150 x 4.6 mm, 5 µm particle size
MOBILE PHASE	A - 0.1% Phosphoric acid in Ultrapure water, B - Acetonitrile; 35% B increasing to 50% B over 20 minutes, hold for 4 minutes and then decrease back to 35% B over 6 minutes.
COLUMN TEMP.	25 °C
FLOW RATE	1.0 mL/minute
INJECTION VOL.	2.0 µL
INJECTION CONC.	1.0 mg/mL in Methanol
DETECTION	425 ± 2 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.

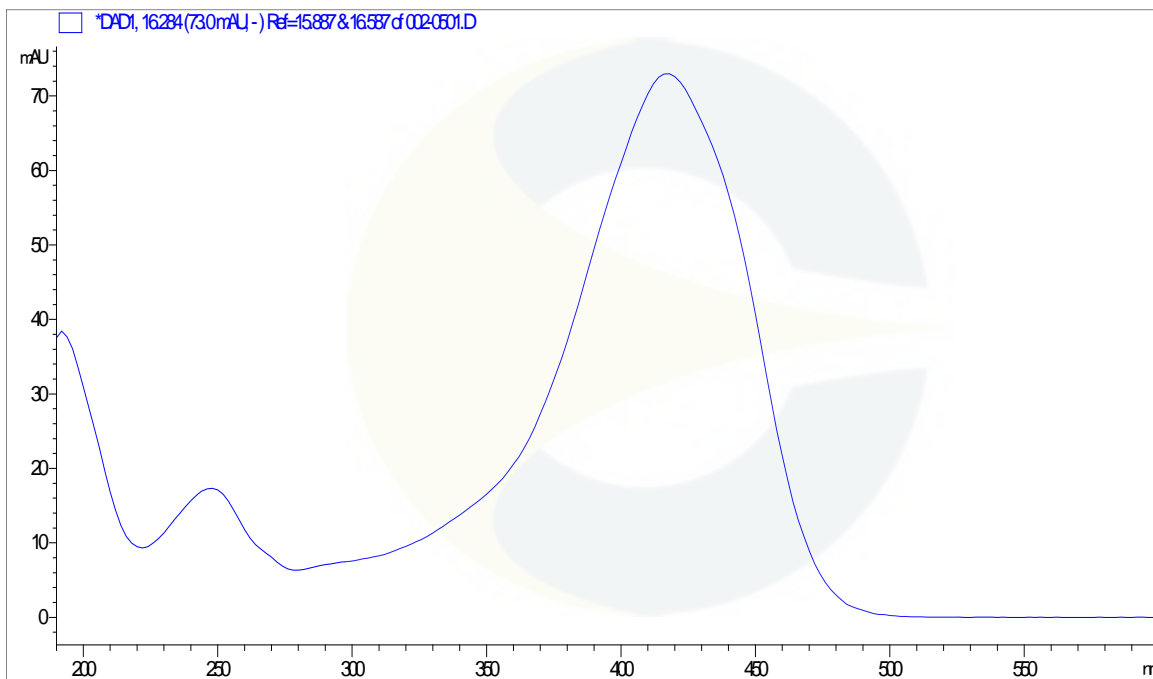
Certificate of Analysis

For Laboratory Use Only

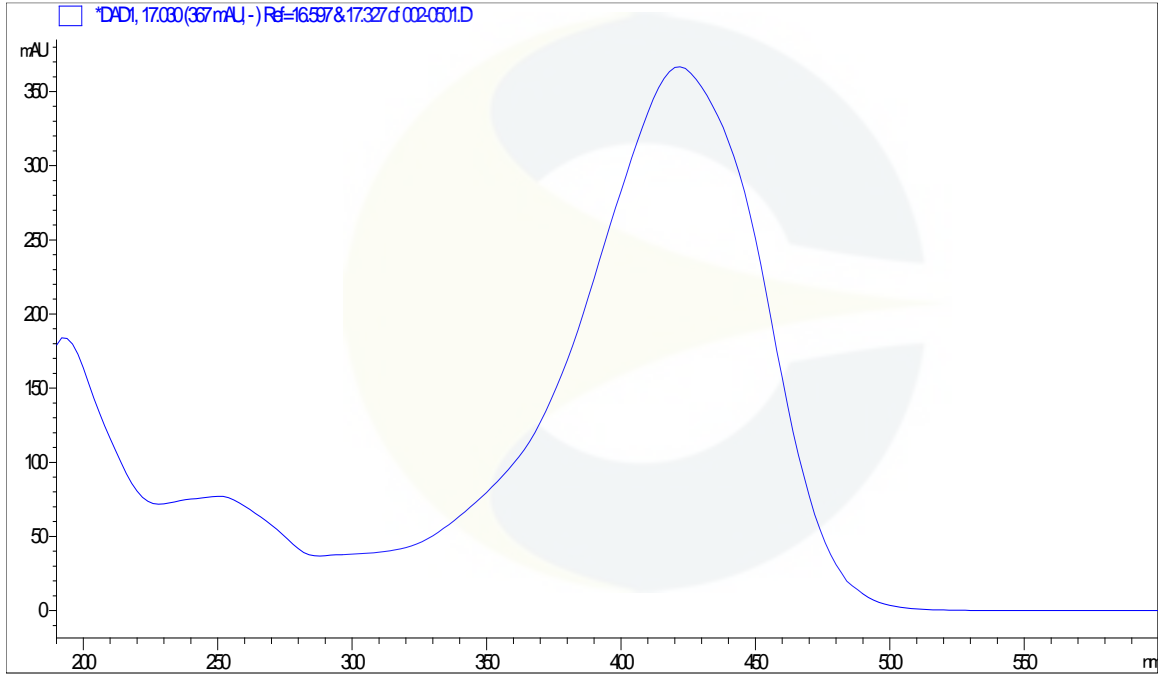
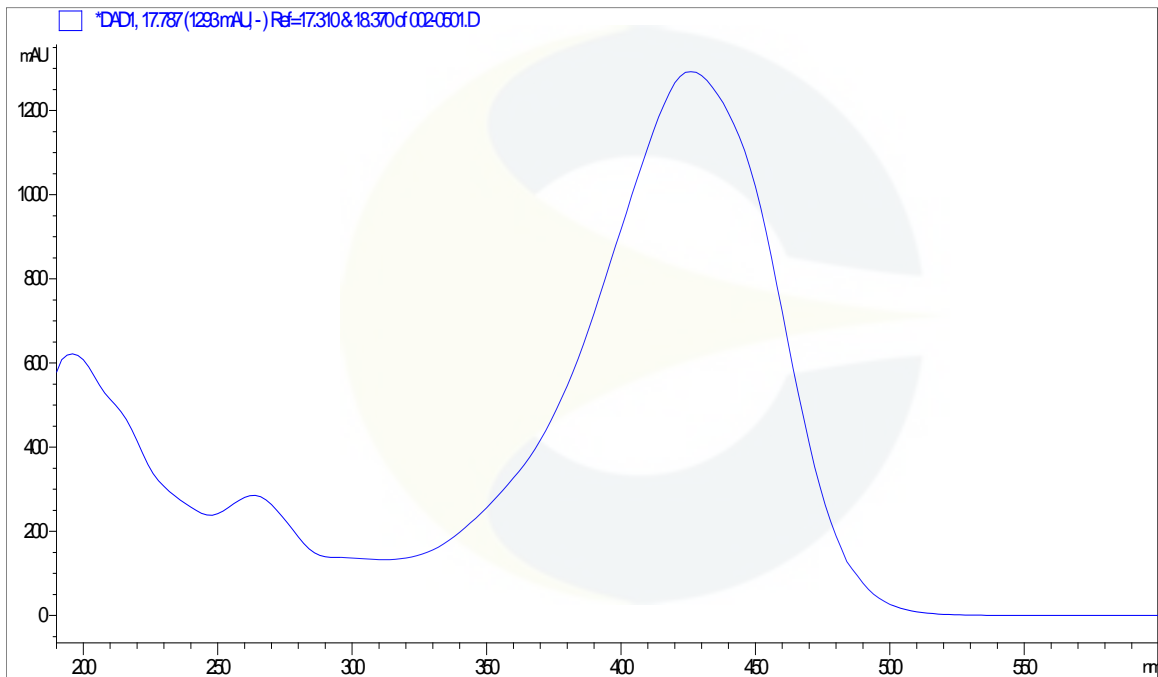
**HPLC CHROMATOGRAM OF CURCUMINOIDS (CDXP-22-00794)**



**UV SPECTRUM AT RT = 16.3 MINUTES (BISEMETHOXYCURCUMIN)**



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 = 17.0 MINUTES (DEMETHOXYCURCUMIN)**

**UV SPECTRUM AT RT = 17.8 MINUTES (CURCUMIN)**


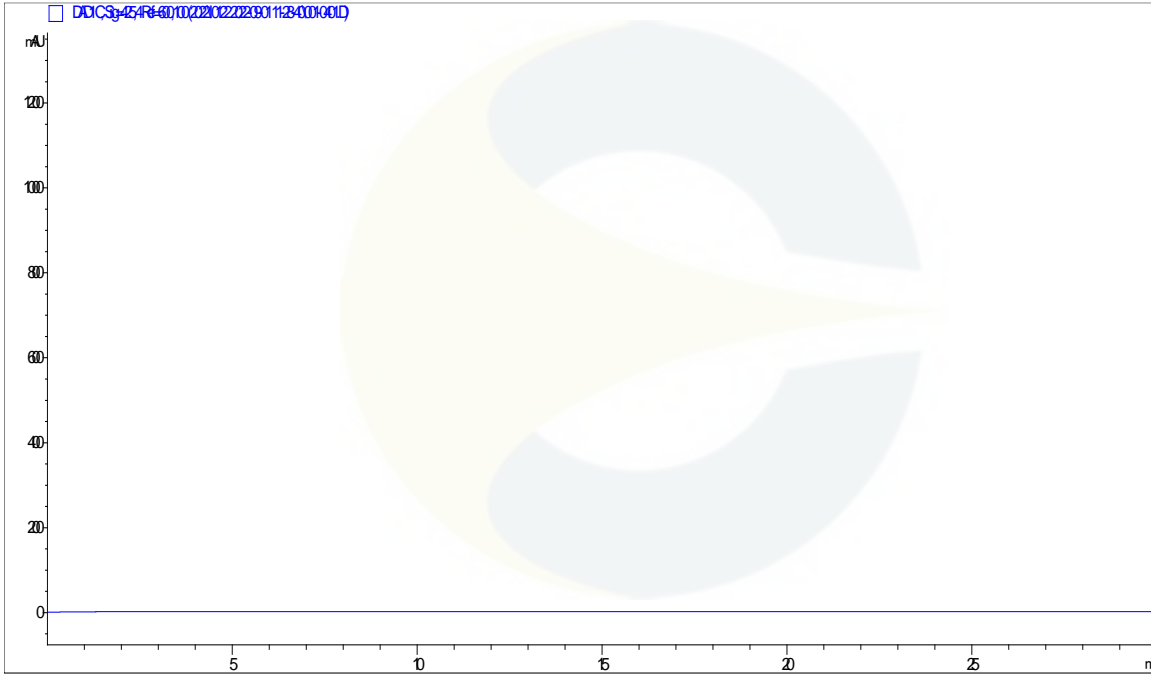
This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

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

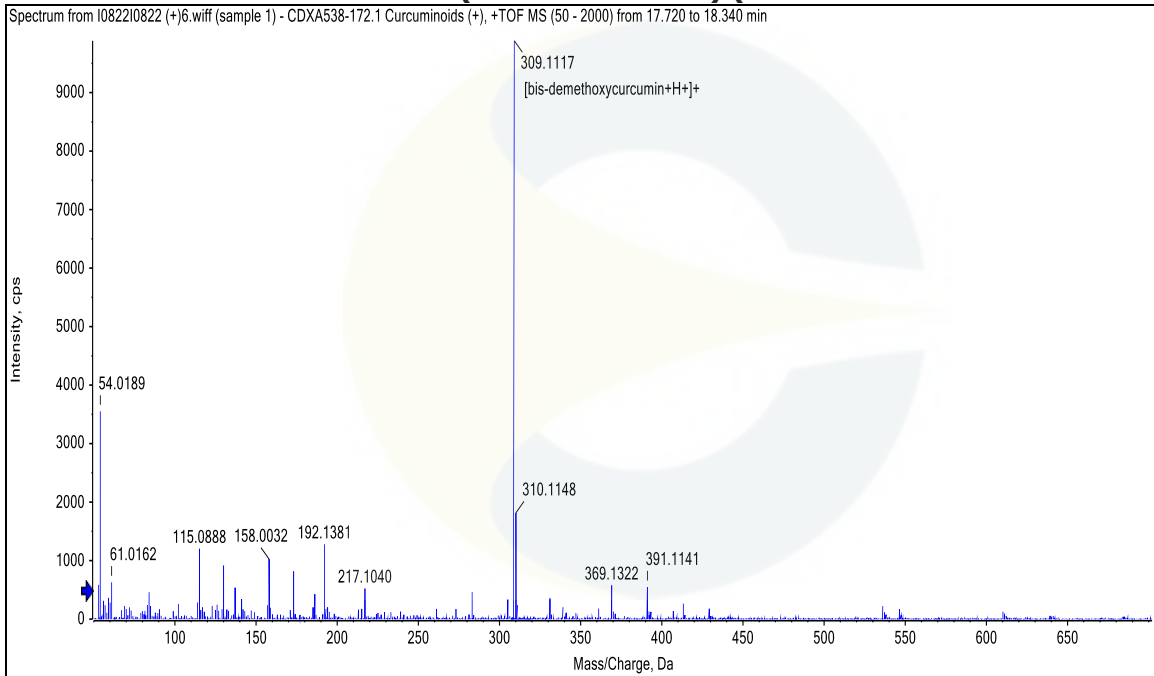
India Contact:  
 Life Technologies (India) Pvt. Ltd.  
 306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi - 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444  
 Email: [customerservice@lifetechindia.com](mailto:customerservice@lifetechindia.com)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

Certificate of Analysis For Laboratory Use Only

**HPLC CHROMATOGRAM OF DILUENT BLANK**



**MASS SPECTRUM OF CURCUMINOIDS (CDXP-22-00794) (BISEMETHOXYCURCUMIN PEAK)**

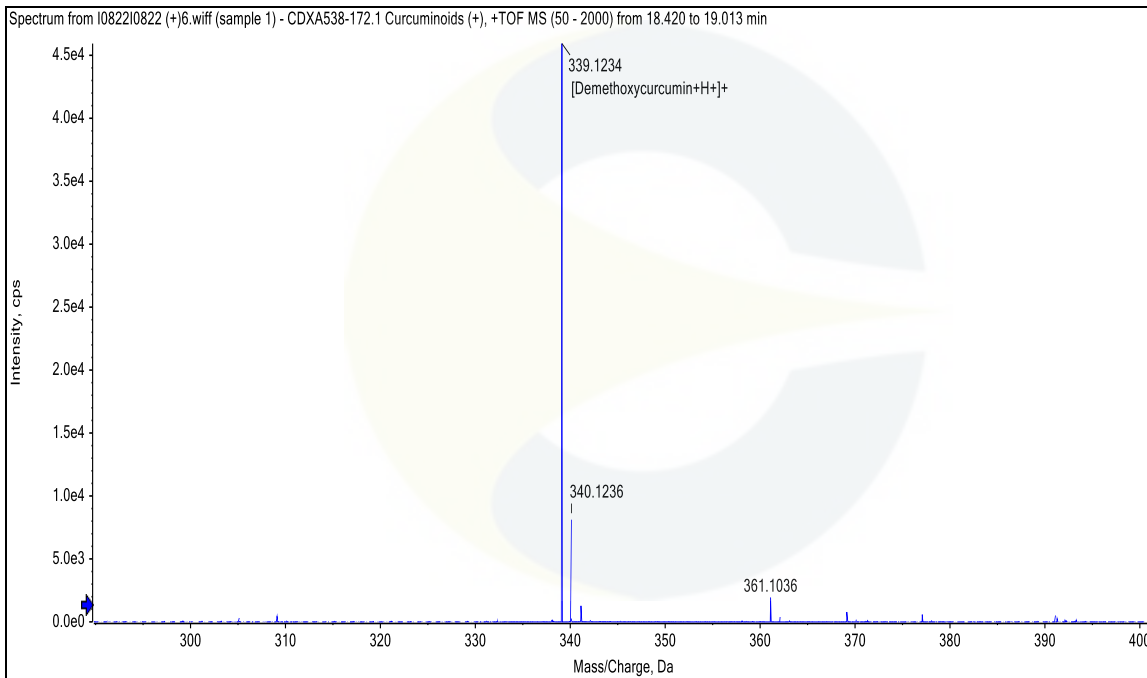


This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

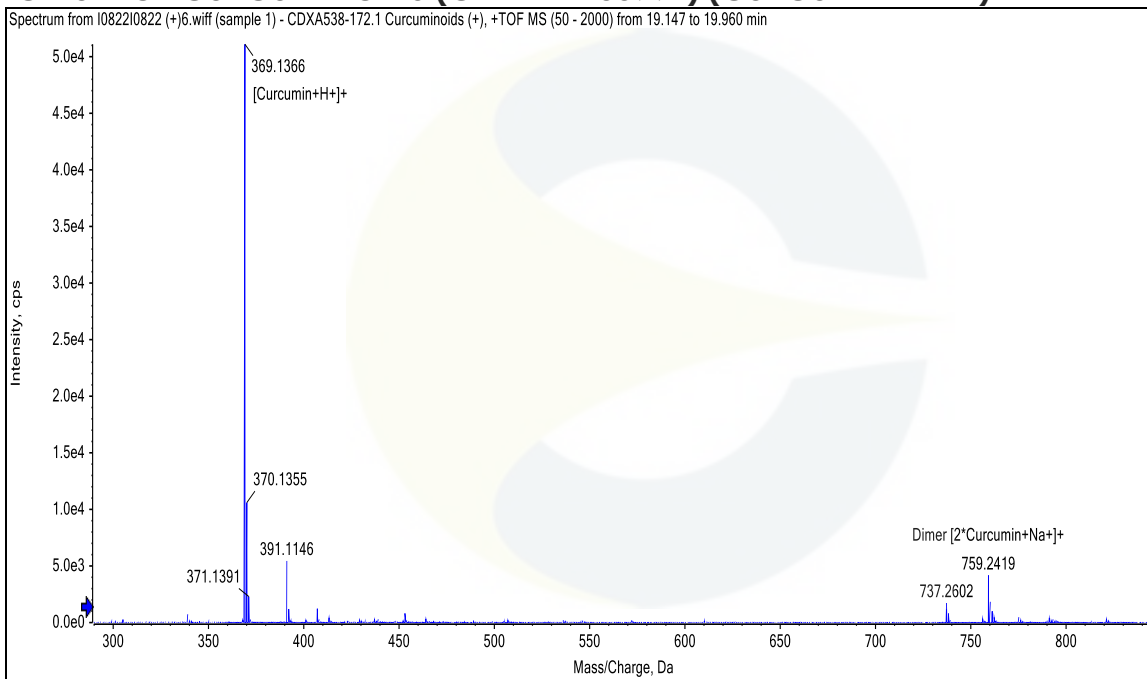
10900 Wilshire Blvd., Suite 600, Los Angeles, CA 90024 | T: +1 949-419-0288 | F: +1 949-419-0294 | [www.chromadex.com](http://www.chromadex.com)  
Laboratory address: 1751 S. Fordham St., Suite 350, Longmont, CO 80503

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](mailto:customerservice@lifetechindia.com) Website: [www.lifetechindia.com](http://www.lifetechindia.com)

**MASS SPECTRUM OF CURCUMINOIDS (CDXP-22-00794) (DEMETHOXYCURCUMIN PEAK)**



**MASS SPECTRUM OF CURCUMINOIDS (CDXP-22-00794) (CURCUMIN PEAK)**



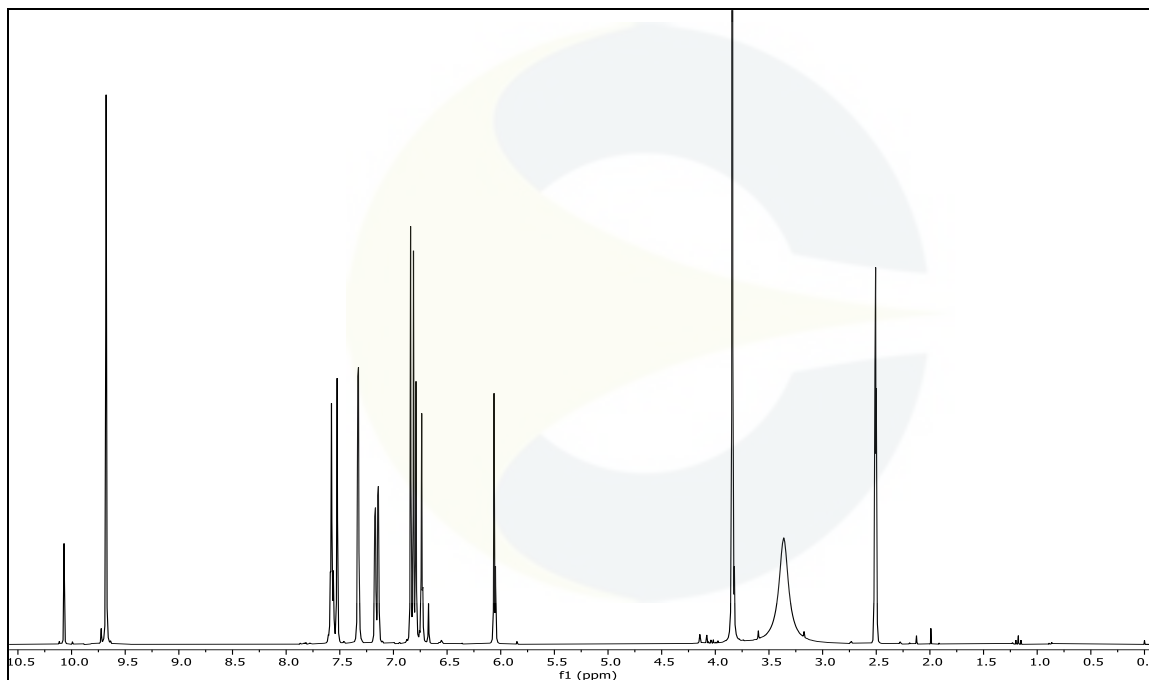
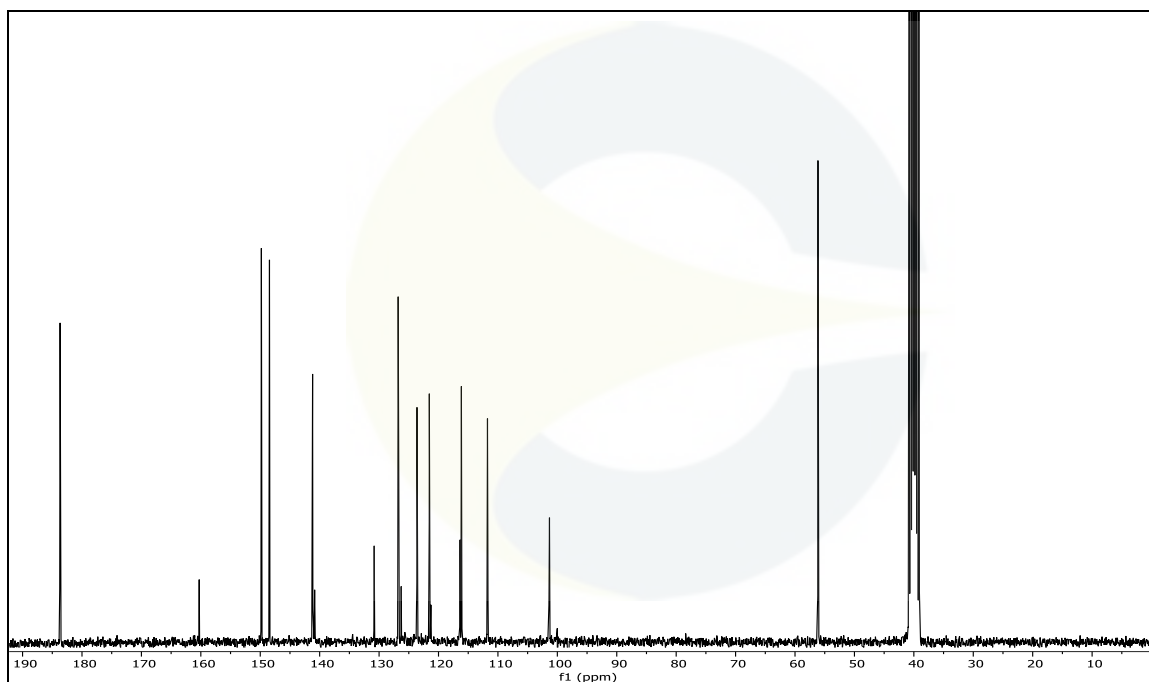
This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

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

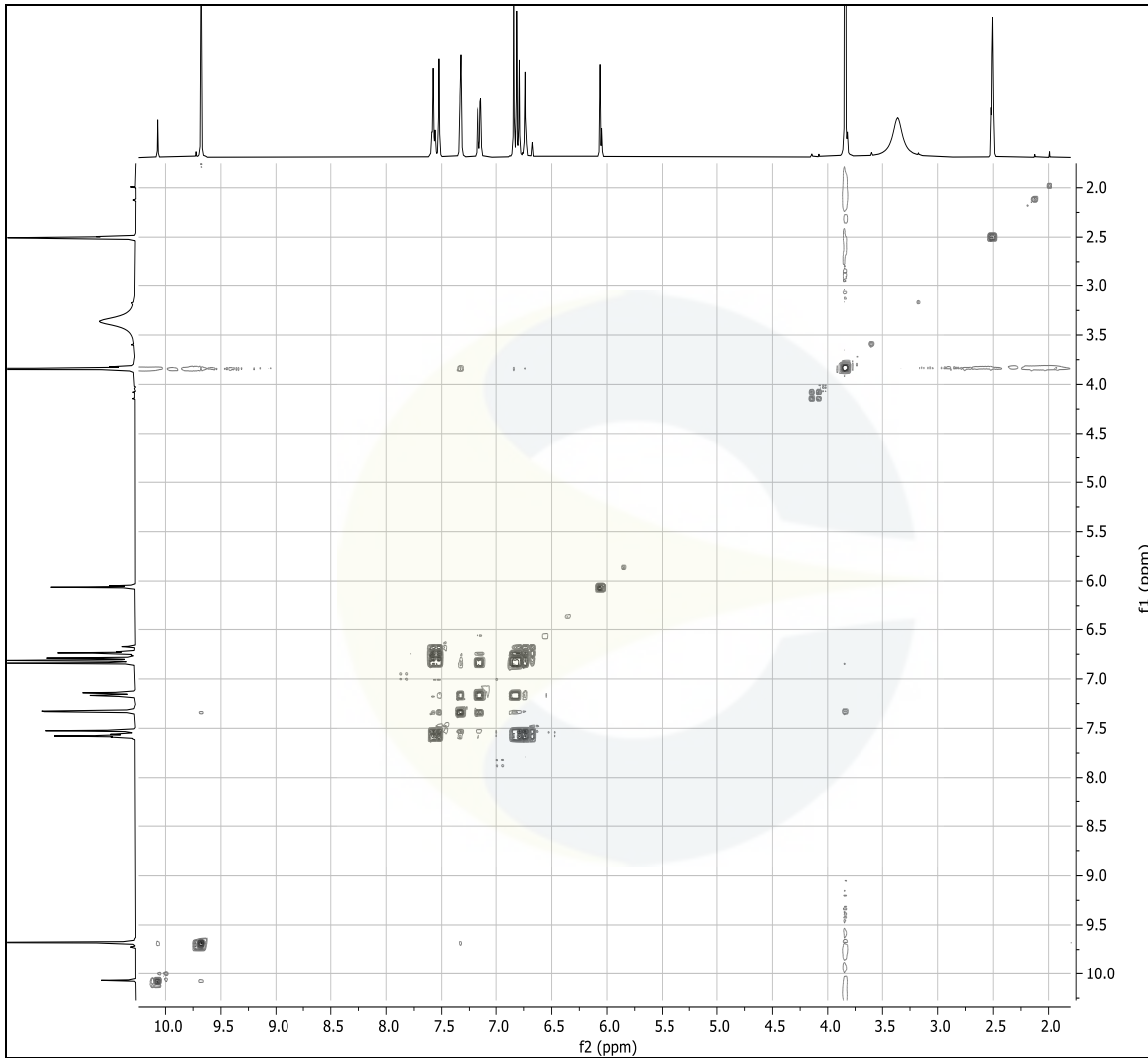
India Contact:  
 Life Technologies (India) Pvt. Ltd.  
 306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi - 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444  
 Email: customerservice@lifetechindia.com Website: www.lifetechindia.com

## Certificate of Analysis

For Laboratory Use Only

**<sup>1</sup>H-NMR SPECTRUM OF CURCUMINOIDS (CDXP-22-00794) IN DMSO *d*<sub>6</sub> + TMS**

**<sup>13</sup>C-NMR SPECTRUM CURCUMINOIDS (CDXP-22-00794) IN DMSO *d*<sub>6</sub> + 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.

**COSY-NMR SPECTRUM OF CURCUMINOIDS (CDXP-22-00794) IN DMSO  $d_6$  + TMS**

**REVISION HISTORY**

<u>Revision History</u>	<u>Date of Revision</u>	<u>Document/Changes</u>
00	09/27/2022	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.