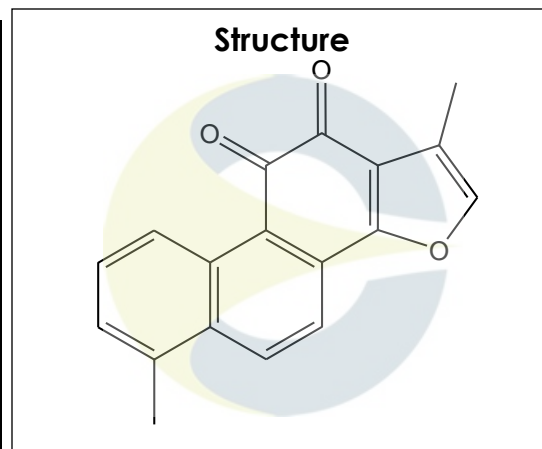


**Certificate of Analysis**
*For Laboratory Use Only*

|                       |                  |
|-----------------------|------------------|
| <b>PRODUCT NAME</b>   | Tanshinone I     |
| <b>PART NUMBER</b>    | 00020042         |
| <b>STANDARD TYPE</b>  | Primary (P)      |
| <b>LOT NUMBER</b>     | 00020042-00416   |
| <b>REPORT NUMBER</b>  | CDXA-RSS-9008-00 |
| <b>SAMPLE NUMBER</b>  | CDXP-20-00416    |
| <b>DATE OF SAMPLE</b> | 06/11/2020       |
| <b>DATE OF REPORT</b> | 06/29/2020       |



|                              |   |
|------------------------------|---|
| <b>CHEMICAL NAMES</b>        | 1,6-dimethyl-Phenanthro[1,2-b]furan-10,11-dione; Tanshinone A |
| <b>CHEMICAL FORMULA</b>      | C <sub>18</sub> H <sub>12</sub> O <sub>3</sub>                |
| <b>MOLECULAR WEIGHT (MW)</b> | 276.29  |
| <b>CHEMICAL FAMILY</b>       | Quinones  |
| <b>CAS NUMBER</b>            | [568-73-0]  |
| <b>EC#(EINECS)</b>           | NA  |
| <b>RTECS</b>                 | SF8282640   |

**ANALYTICAL RESULTS**

| TEST              | METHOD                   | SPECIFICATION         | RESULT                |
|-------------------|--------------------------|-----------------------|-----------------------|
| Adjusted Purity   | NA                       | NA                    | 90.8%                 |
| HPLC              | 0.700.10.2.METH22        | NA                    | 90.8%                 |
| NMR               | 99.1-CD-1.0-000122       | Conforms to structure | Conforms to structure |
| Mass Spectrum     | Direct Infusion, ESI (+) | Conforms              | Conforms              |
| Residual Solvent* | 99.1-CD-4.0-000115       | NA                    | ND                    |
| Water             | 0.700.12.37              | NA                    | ND                    |
| Appearance        | NA                       | NA                    | Brown Powder          |

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

ADJUSTED PURITY: 90.8% IS BASED ON (100 - 0.0 SOLVENTS - 0.0 WATER) X 90.8% HPLC

**STORAGE CONDITIONS**

|                        |                                     |
|------------------------|-------------------------------------|
| <b>STORAGE</b>         | Room Temperature in a dry place.    |
| <b>EXPIRATION DATE</b> | 06/2025 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.

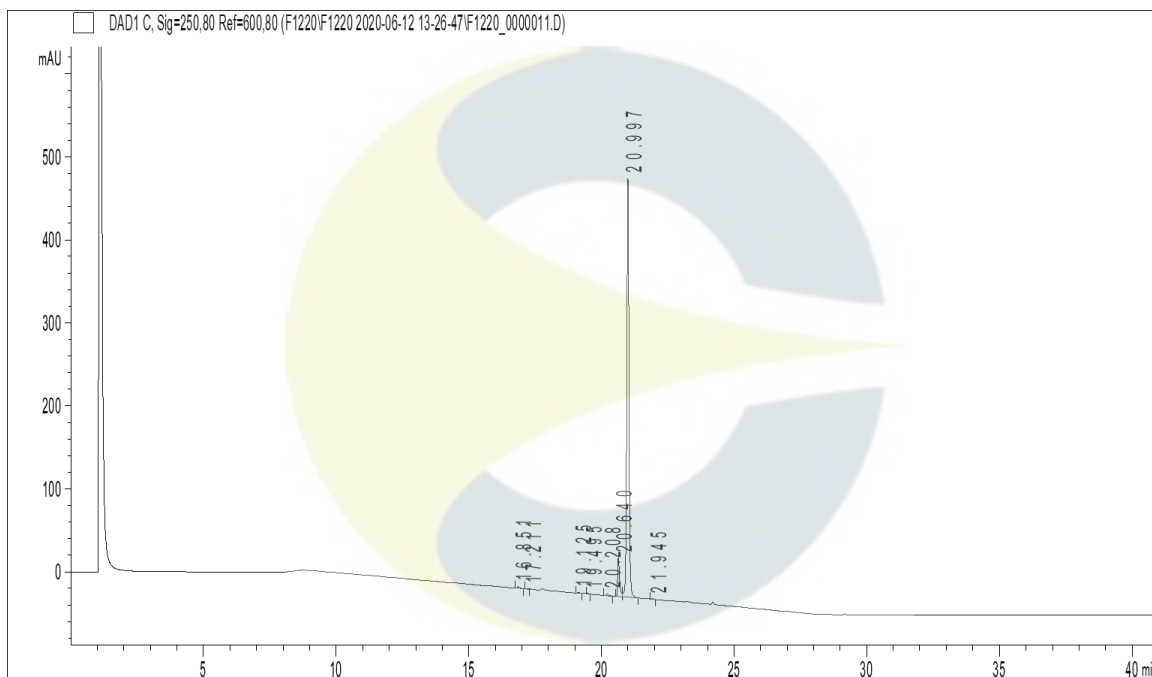
# Certificate of Analysis

*For Laboratory Use Only*

## ANALYTICAL CONDITIONS

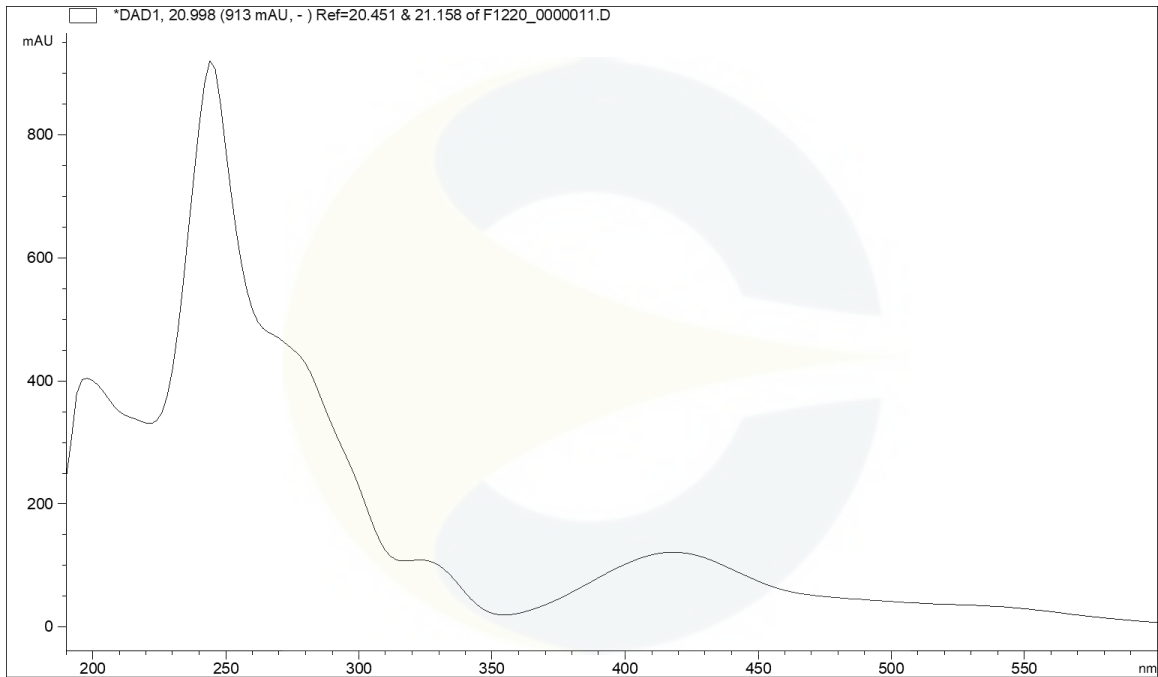
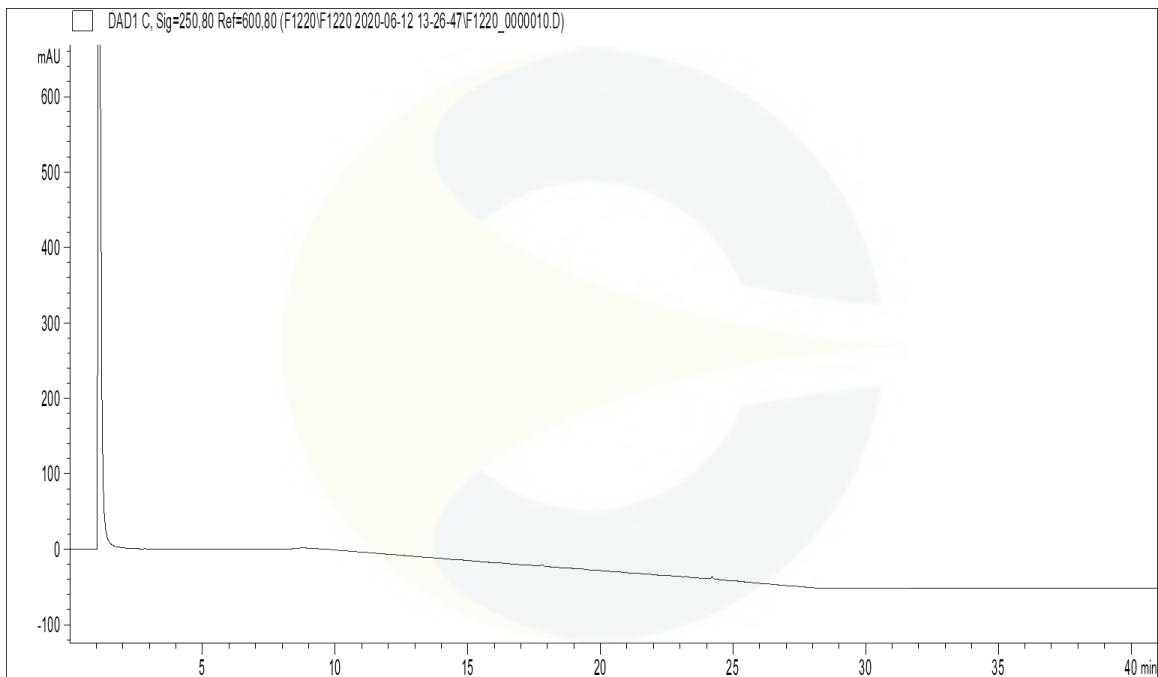
|                        |   |
|------------------------|---|
| <b>INSTRUMENT</b>      | AGILENT 1260 HPLC UV-VIS (DAD);<br>AGILENT 6510 QTOF  |
| <b>COLUMN</b>          | Phenomenex Luna C18(2) 150 x 2.00 mm, 5 µm particle size  |
| <b>MOBILE PHASE</b>    | A - 0.1% Trifluoroacetic acid in Ultrapure water, B - Acetonitrile;<br>Isocratic 5% B for 5 minutes, then increasing to 95% B over 20 minutes. Hold at 95% B for 15 minutes, then decreasing to 5% B over 1 minute. |
| <b>COLUMN TEMP.</b>    | 60 °C   |
| <b>FLOW RATE</b>       | 0.4 mL/minute   |
| <b>INJECTION VOL.</b>  | 0.2 µL  |
| <b>INJECTION CONC.</b> | 1.2 mg/mL in Dimethyl sulfoxide   |
| <b>DETECTION</b>       | 250 ± 40 nm   |

## HPLC CHROMATOGRAM OF TANSHINONE I (CDXP-20-00416)



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

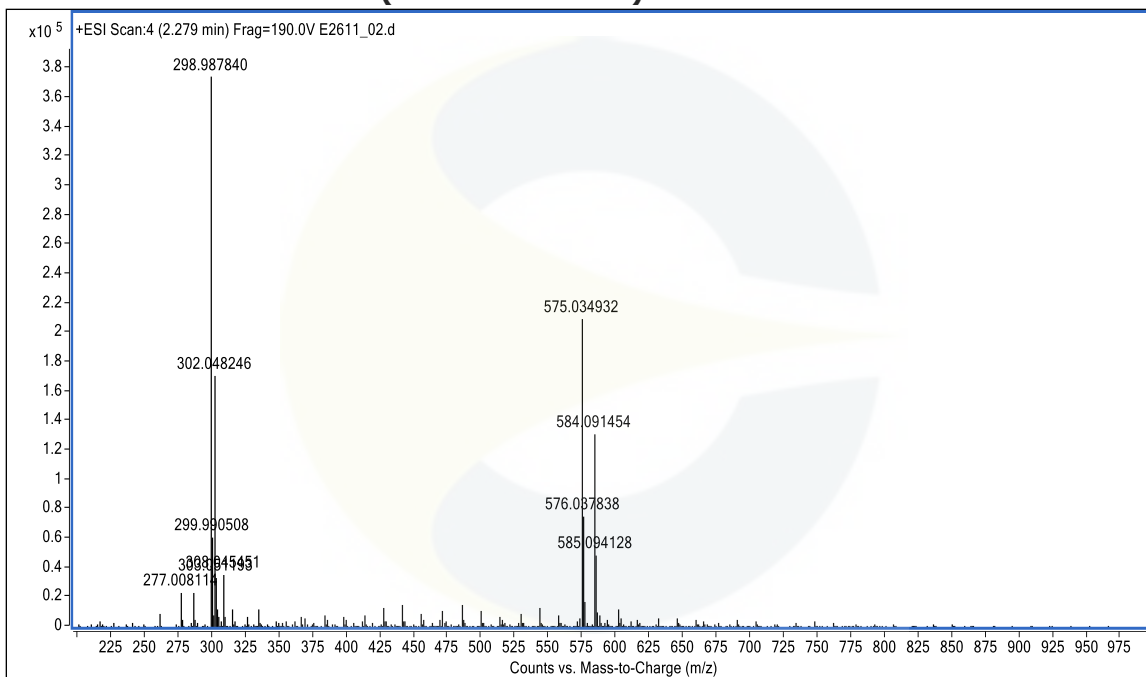
**UV SPECTRUM AT RT 21.0 MINUTES**

**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.

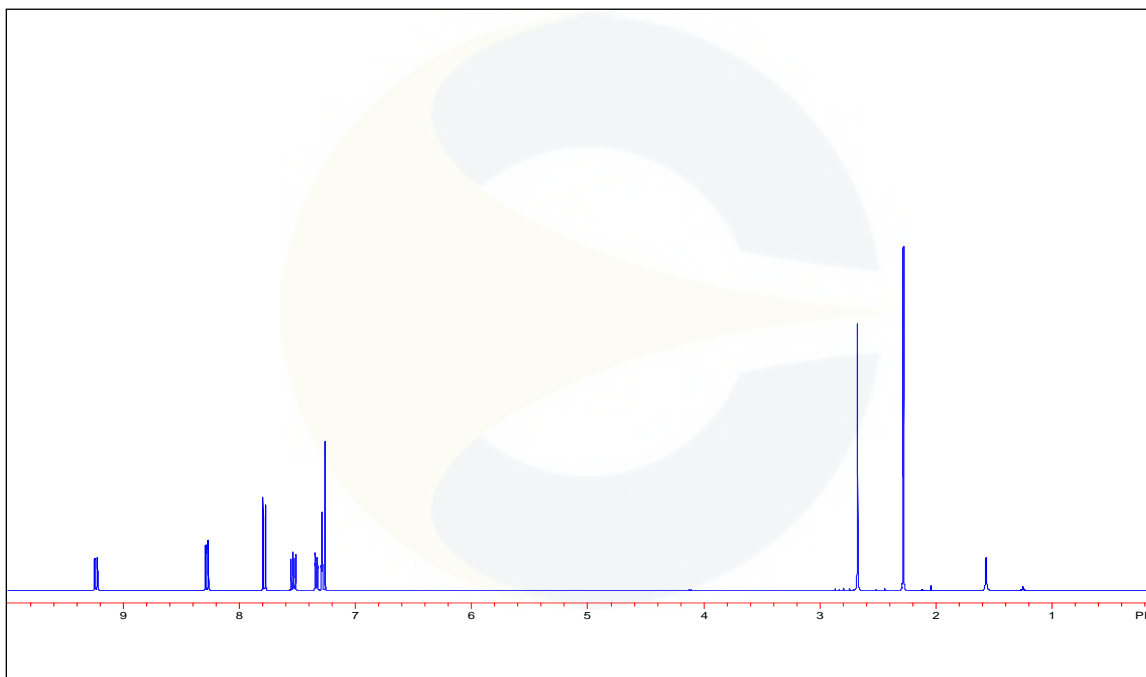
10900 Wilshire Blvd., Suite 600, Los Angeles, CA 90024 | T: +1 949-419-0288 | F: +1 949-419-0294 | [www.chromadex.com](http://www.chromadex.com)  
 Laboratory address: 1751 S. Fordham St., Suite 350, Longmont, CO 80503

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)

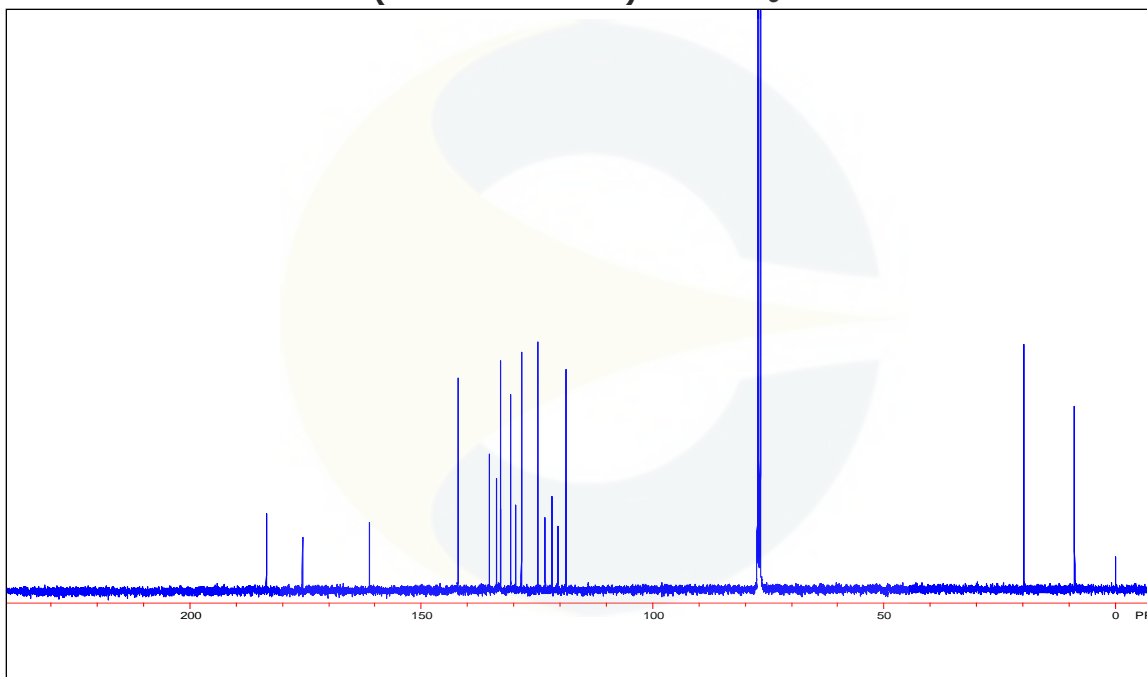
**MASS SPECTRUM OF TANSHINONE I (CDXP-20-00416)**



**<sup>1</sup>H-NMR SPECTRUM OF TANSHINONE I (CDXP-20-00416) IN CDCl<sub>3</sub>**



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.

**<sup>13</sup>C-NMR SPECTRUM TANSHINONE I (CDXP-20-00416) IN CDCl<sub>3</sub>**

**REVISION HISTORY**

| <u>Revision History</u> | <u>Date of Revision</u> | <u>Document/Changes</u> |
|-------------------------|-------------------------|-------------------------|
| 00                      | 06/29/2020              | 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.