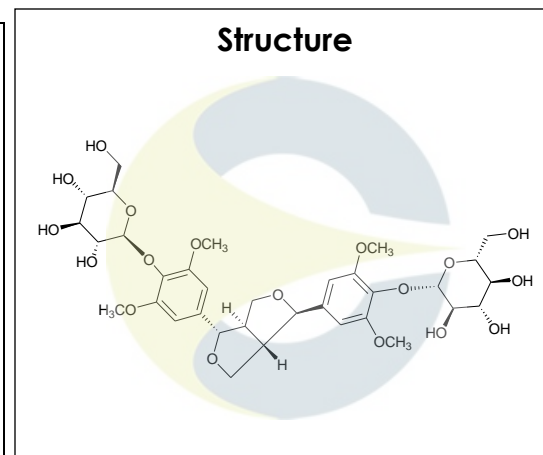


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| | |
|-----------------------|------------------|
| PRODUCT NAME | Eleutheroside E |
| PART NUMBER | 00005065 |
| STANDARD TYPE | Primary (P) |
| LOT NUMBER | 00005065-519 |
| REPORT NUMBER | CDXA-RSS-9187-00 |
| SAMPLE NUMBER | CDXP-20-00732 |
| DATE OF SAMPLE | 10/05/2020 |
| DATE OF REPORT | 11/06/2020 |



| | |
|------------------------------|--|
| CHEMICAL NAMES | [(1R,3aR,4S,6aS)-Tetrahydro-1H,3H-furo[3,4-c]furan-1,4-diyl]bis(2,6-dimethoxy-4,1-phenylene)-bis-β-D-glucopyranoside |
| CHEMICAL FORMULA | C ₃₄ H ₄₆ O ₁₈ |
| MOLECULAR WEIGHT (MW) | 742.72 |
| CHEMICAL FAMILY | Lignans |
| CAS NUMBER | [39432-56-9] |
| EC#(EINECS) | 609-679-3 |
| RTECS | LZ6414000 |

ANALYTICAL RESULTS

| TEST | METHOD | SPECIFICATION | RESULT |
|-------------------|-------------------|-----------------------|-----------------------|
| Adjusted Purity | NA | ≥ 85% | 97.5% |
| HPLC | 0.700.10.2.METH22 | ≥ 90% | 98.7% |
| NMR | 0.700.12.4 | Conforms to structure | Conforms to structure |
| Mass Spectrum | 0.700.12.27 | Conforms | Conforms |
| Residual Solvent* | USP <467> | NA | ND |
| Water | 0.700.12.37 | NA | 1.2% |
| Appearance | NA | NA | White powder |

*Testing performed at an ISO 17025 accredited subcontracted laboratory.

ADJUSTED PURITY: 97.5% IS BASED ON (100 - 0.0 SOLVENTS - 1.2 WATER) X 98.7% HPLC

STORAGE CONDITIONS

| | |
|------------------------|-------------------------------------|
| STORAGE | -20 °C in a dry place. |
| EXPIRATION DATE | 10/2025 under the above conditions. |

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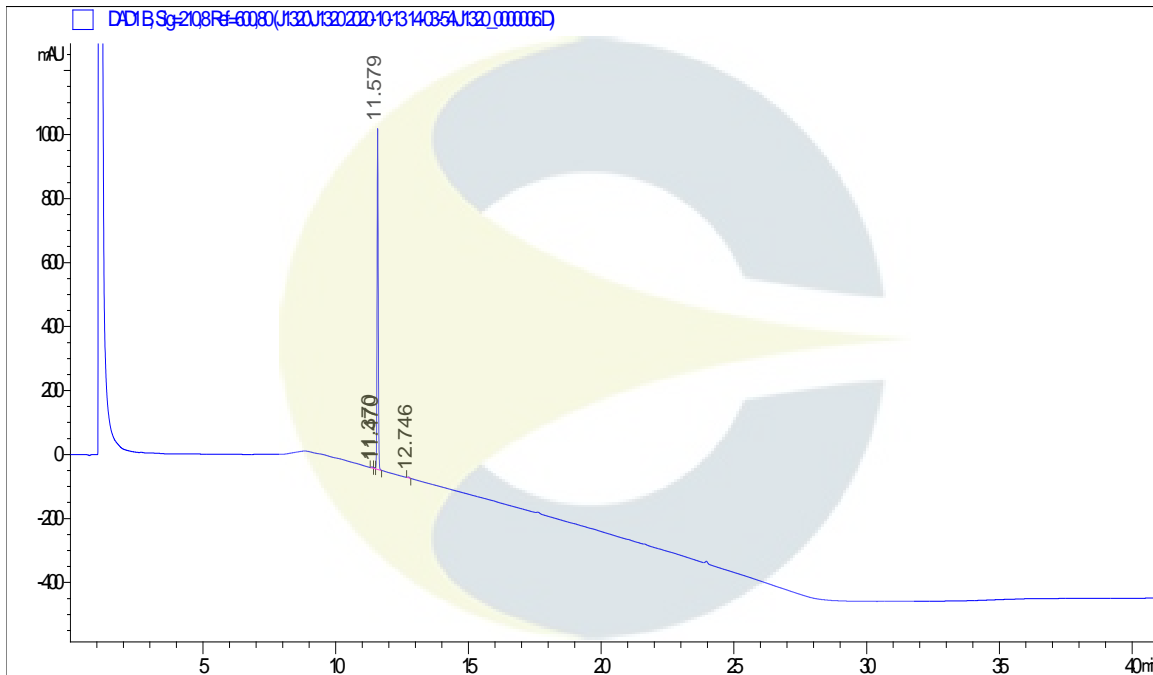
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ANALYTICAL CONDITIONS

| | |
|------------------------|---|
| INSTRUMENT | AGILENT 1260 HPLC UV-VIS (DAD); AB-SCIEX 6600 TRIPLE TOF |
| 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, then decreasing to 5% B over 1 minute. |
| COLUMN TEMP. | 60 °C |
| FLOW RATE | 0.4 mL/minute |
| INJECTION VOL. | 0.2 µL |
| INJECTION CONC. | 1.0 mg/mL in Dimethyl Sulfoxide |
| DETECTION | 210 ± 4 nm |

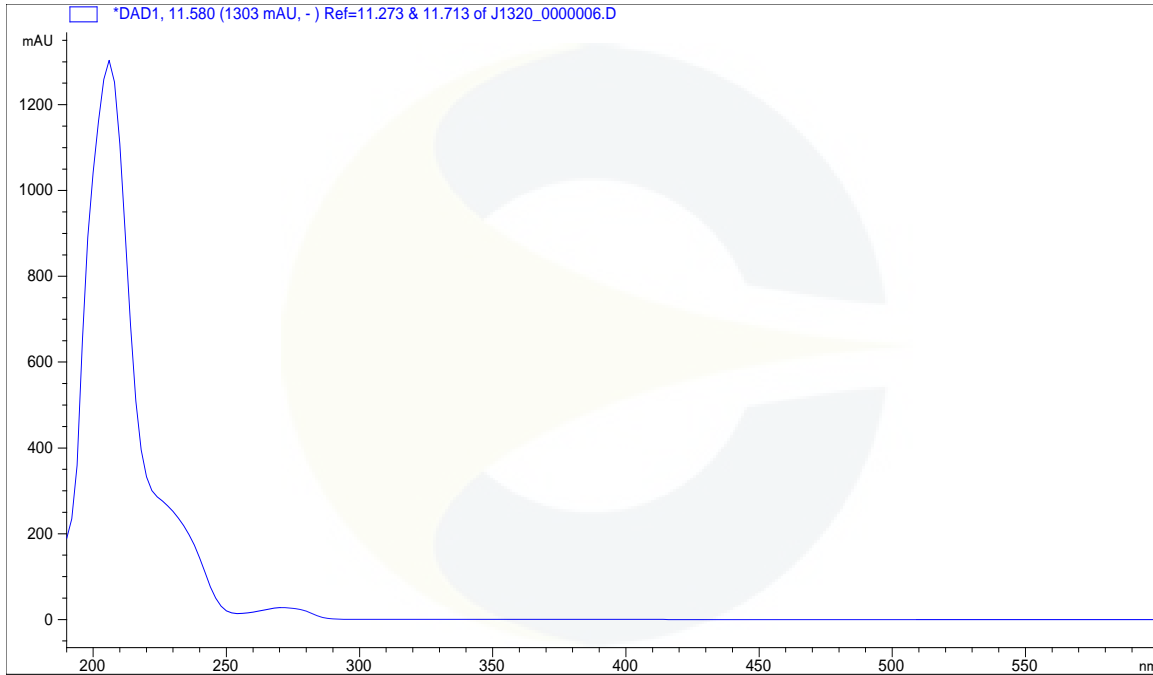
HPLC CHROMATOGRAM OF ELEUTHEROSIDE E (CDXP-20-00732)



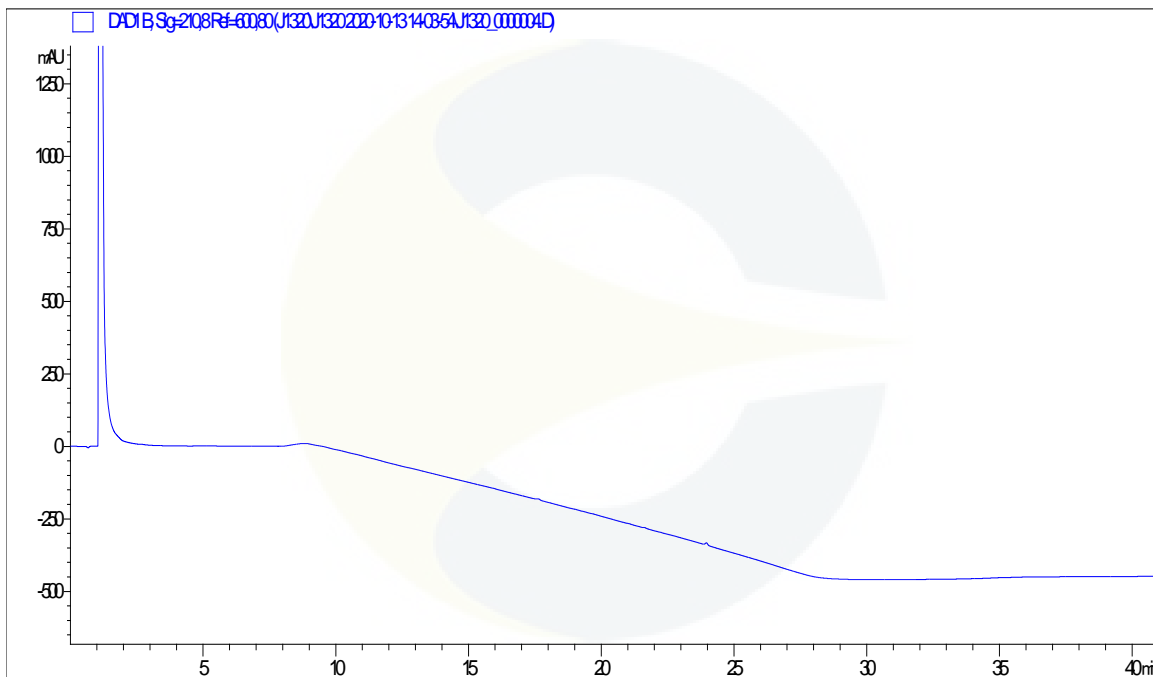
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UV SPECTRUM AT RT = 11.6 MINUTES

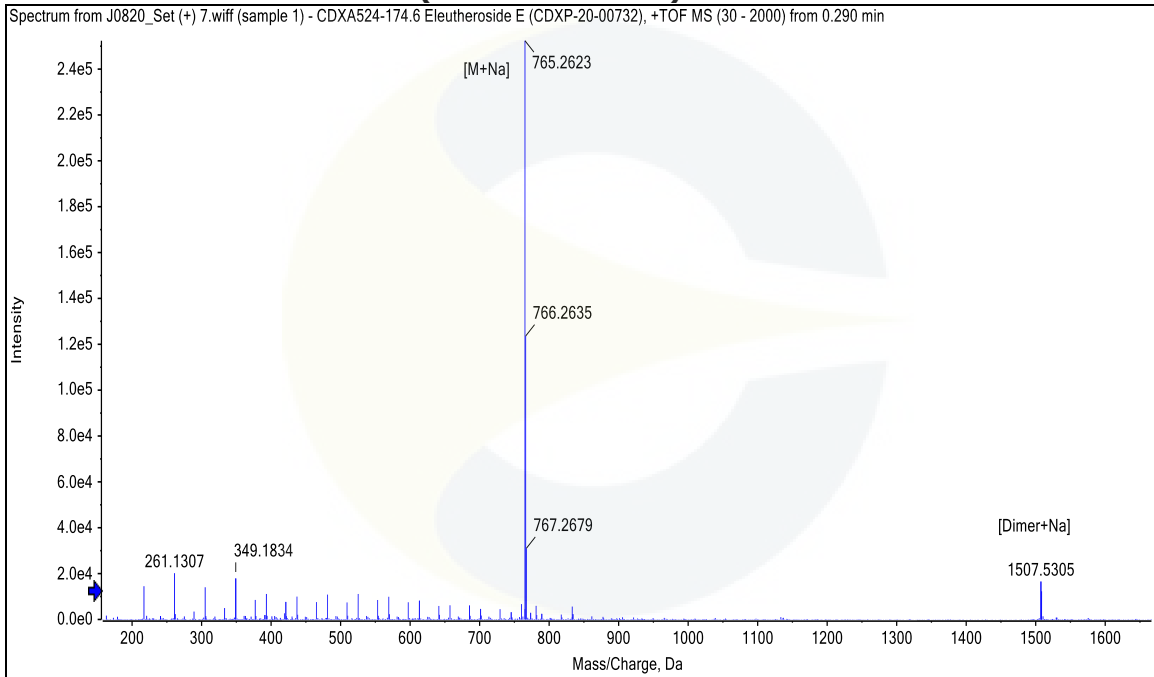


HPLC CHROMATOGRAM OF DILUENT BLANK

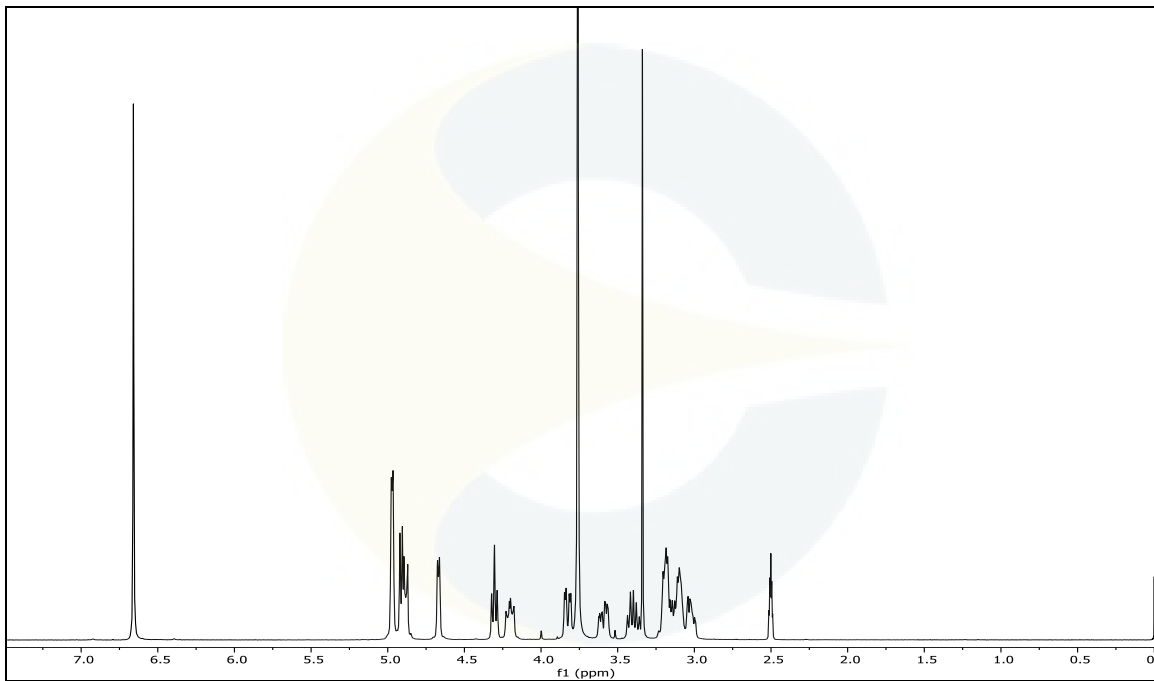


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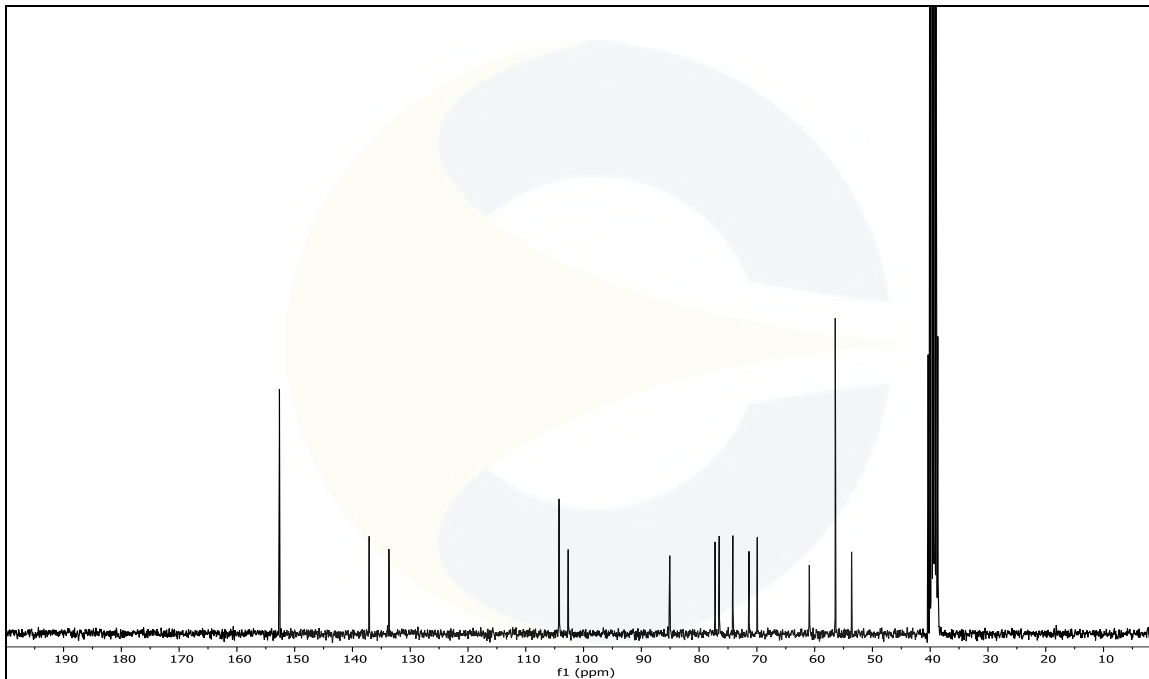
MASS SPECTRUM OF ELEUTHEROSIDE E (CDXP-20-00732)



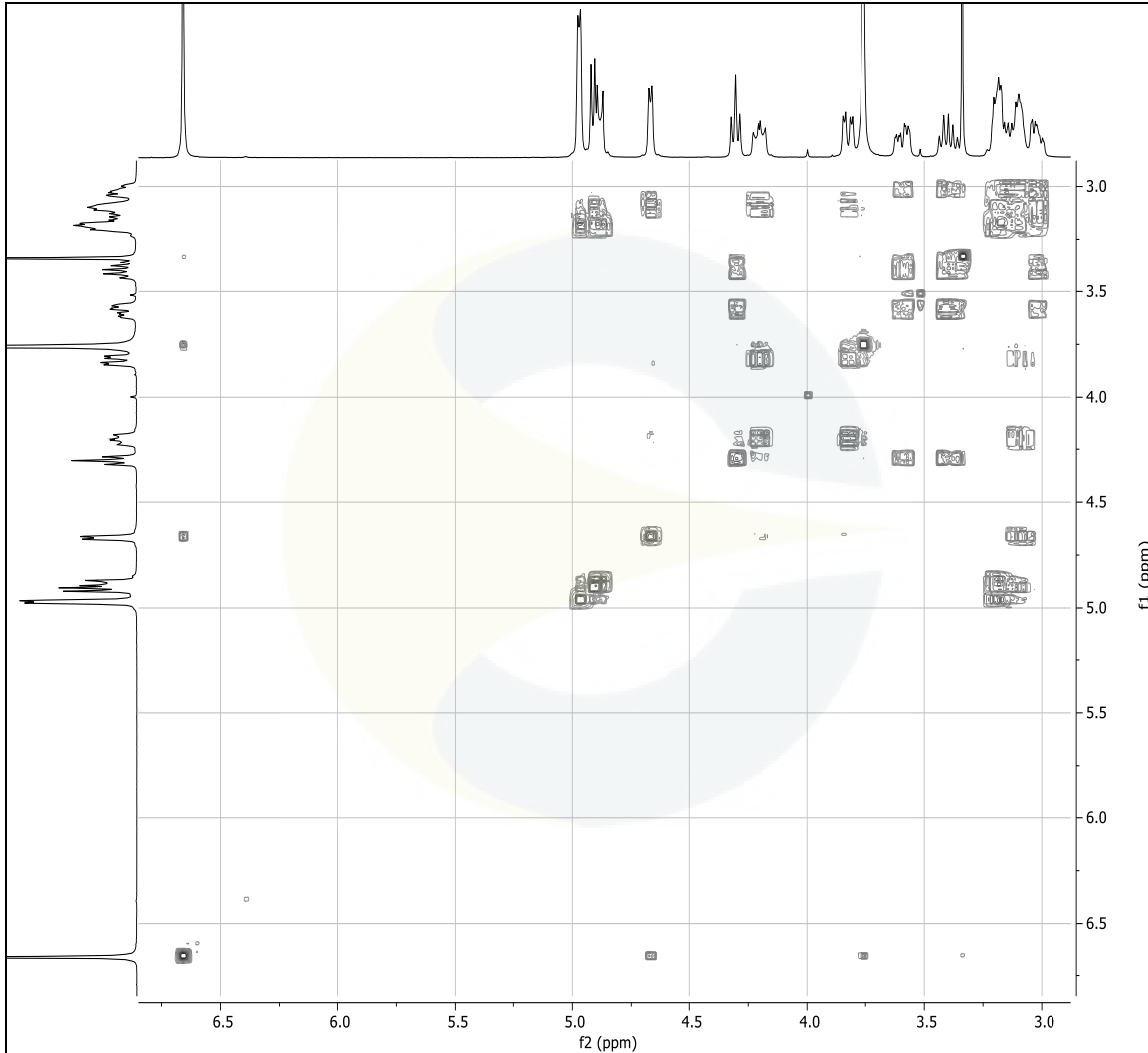
¹H-NMR SPECTRUM OF ELEUTHEROSIDE E (CDXP-20-00732) IN DMSO-d₆+ TMS



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¹³C-NMR SPECTRUM ELEUTHEROSIDE E (CDXP-20-00732) IN DMSO-d₆ + TMS

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COSY-NMR SPECTRUM OF ELEUTHEROSIDE E (CDXP-20-00732) IN DMSO- d_6 + TMS

REVISION HISTORY

| <u>Revision History</u> | <u>Date of Revision</u> | <u>Document/Changes</u> |
|-------------------------|-------------------------|-------------------------|
| 00 | 11/06/2020 | New report |

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