

**Name:** Levonorgestrel-D8 (major)  
((-)-Norgestrel-2,2,4,6,6,10,16,16-D8 (major))

**Lot#:** GR-5-207-1

**Test Date:** 12/05/2024 (re-test date: 12/05/2029)

**CAS No.:** 797-63-7 (unlabeled)

**MF:** C<sub>21</sub>H<sub>20</sub>D<sub>8</sub>O<sub>2</sub>

**MW:** 320.50

**Appearance:** White Solid

**Purity:** 99.6% by HPLC; >98% atom D

**<sup>1</sup>H-NMR:** Conforms

**MS-ESI (+)** Conforms (shows peak at m/z = 321.27 [M+H]<sup>+</sup>)

**Storage** Store at -18°C in a dry place away from direct sunlight

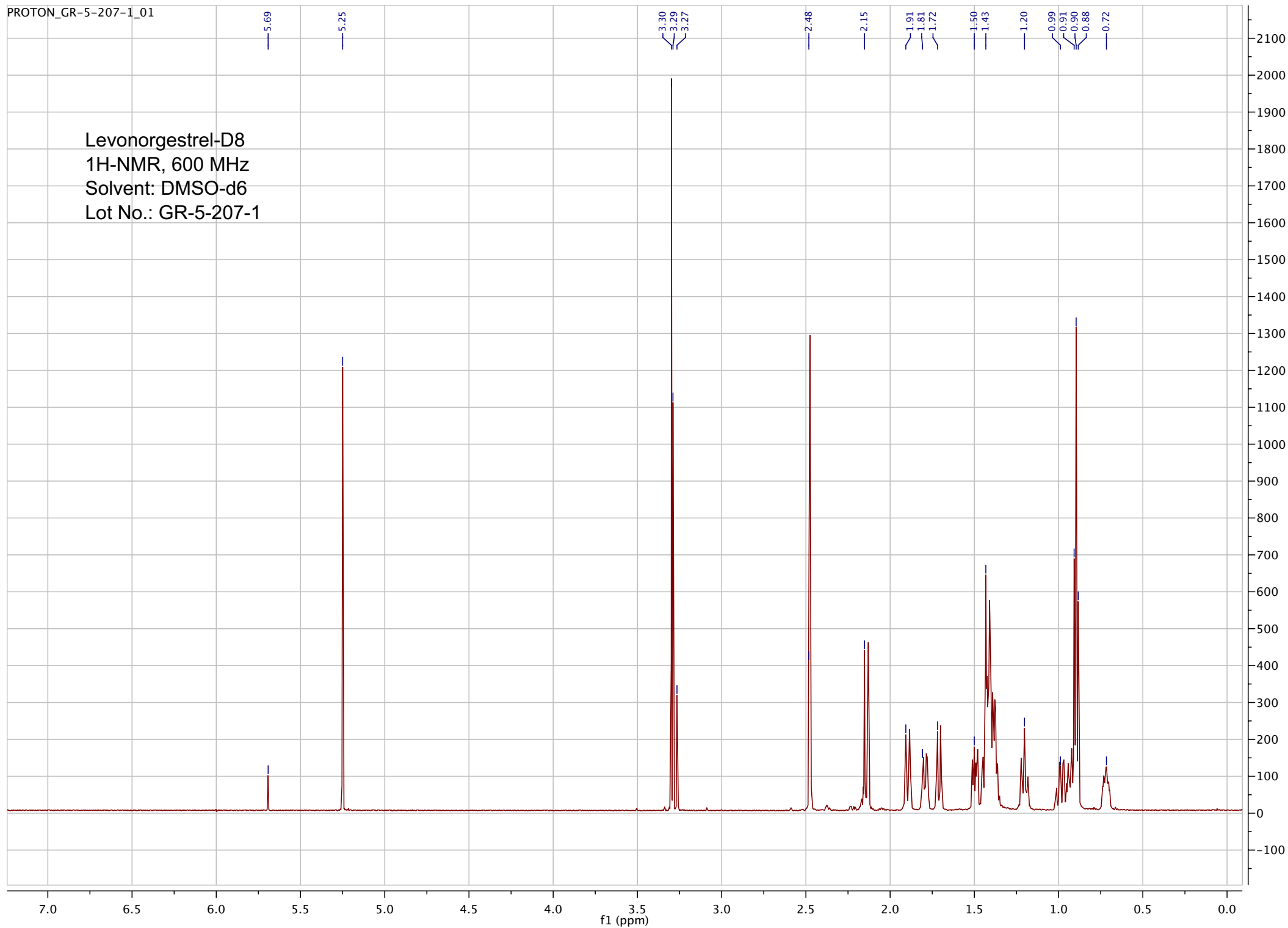
Approved by:

Date: 04/24/2025

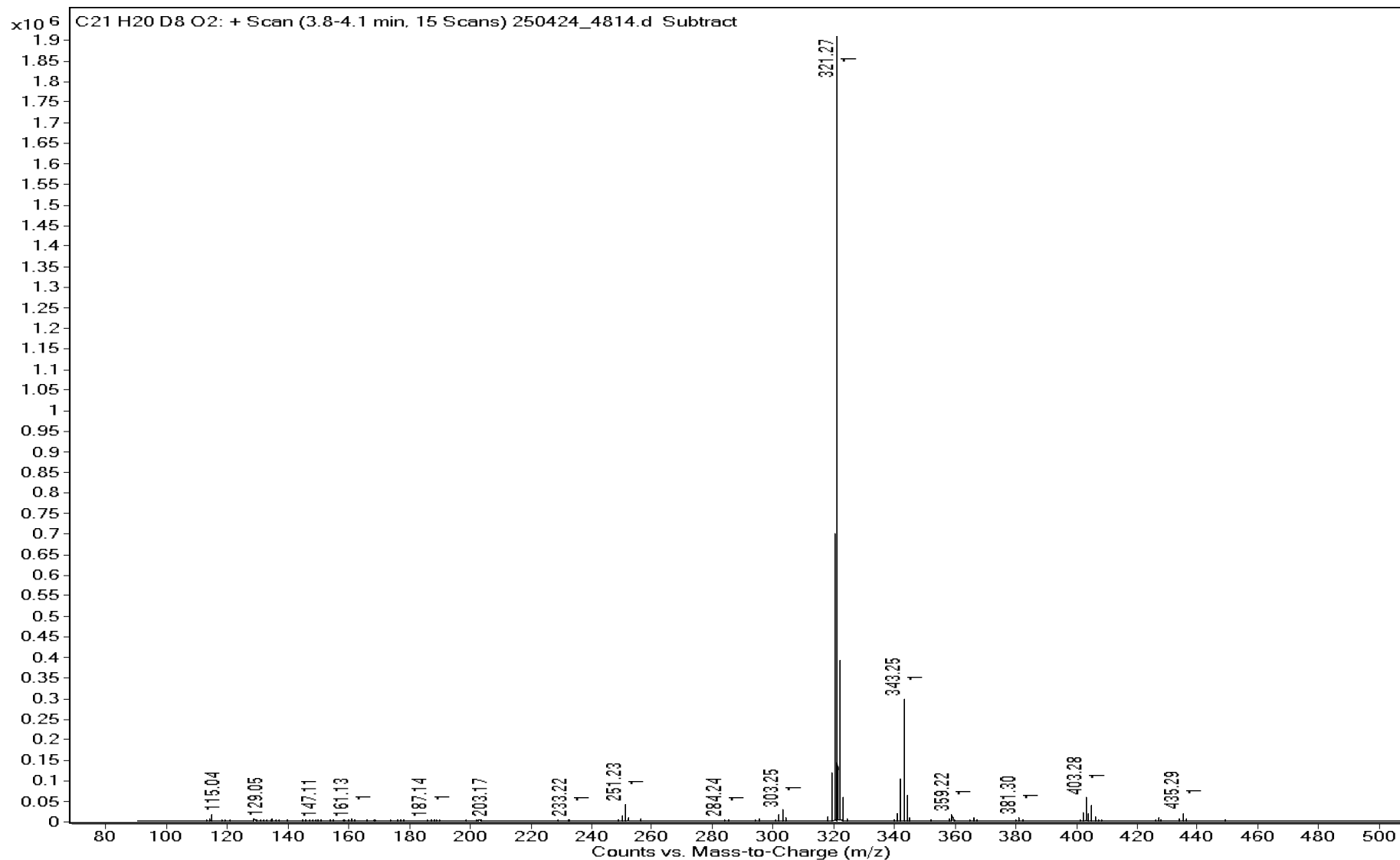
Viorica Rusu, QC/QA Manager

PROTON\_GR-5-207-1\_01

Levonorgestrel-D8  
1H-NMR, 600 MHz  
Solvent: DMSO-d6  
Lot No.: GR-5-207-1



|                    |                      |                   |                  |                       |                        |
|--------------------|----------------------|-------------------|------------------|-----------------------|------------------------|
| <b>Sample Name</b> | GR-5-207-1           | <b>Data File</b>  | 250424_4814.d    | <b>Acq Method</b>     | HRMS.m                 |
| <b>DA Method</b>   | AIMS_Accurate_Mass.m | <b>Instrument</b> | Agilent 6538 UHD | <b>Acq Date, Time</b> | 24/04/2025 12:52:34 PM |
| <b>Comment</b>     | ESI+                 |                   |                  |                       |                        |



# ESI-MS Report

## Molecular Formula Generation (MFG)

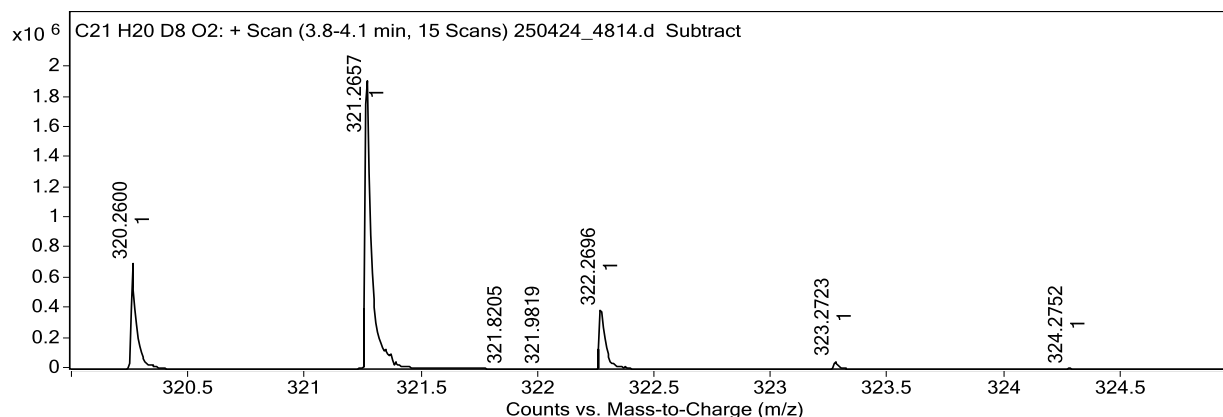
|                    |                  |                       |                        |
|--------------------|------------------|-----------------------|------------------------|
| <b>Sample Name</b> | GR-5-207-1       | <b>Data File</b>      | 250424_4814.d          |
| <b>Acq Method</b>  | HRMS.m           | <b>DA Method</b>      | AIMS_Accurate_Mass.m   |
| <b>Instrument</b>  | Agilent 6538 UHD | <b>Acq Date, Time</b> | 24/04/2025 12:52:34 PM |
| <b>Comment</b>     | ESI+             |                       |                        |

### Target Ion Species

| Ion Species | m/z      | Ionic Formula |
|-------------|----------|---------------|
| (M+H)+      | 321.2657 | C21 H21 D8 O2 |

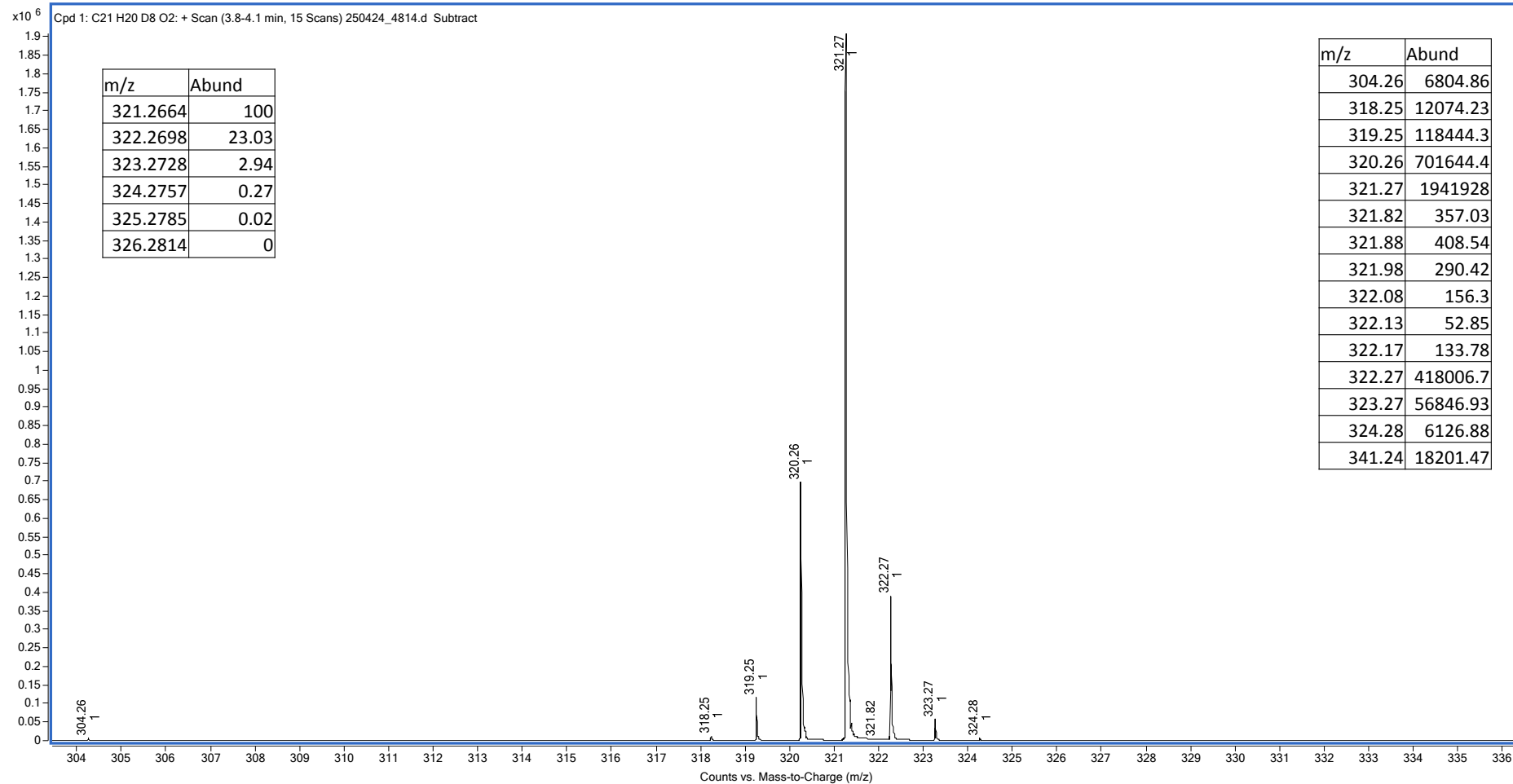
### MFG Calculator Results

| Target m/z | Ionic Formula    | Calc m/z | +/- (mDa) | +/- (ppm) | DBE | MFG Score |
|------------|------------------|----------|-----------|-----------|-----|-----------|
| 321.2657   | C21 H21 D8 O2    | 321.2664 | -0.7      | -2.2      | 8.0 | 98.57     |
| 321.2657   | C17 H17 D8 N6    | 321.2637 | 2.0       | 6.2       | 9.0 | 84.30     |
| 321.2657   | C16 H21 D8 N2 O4 | 321.2624 | 3.3       | 10.3      | 4.0 | 72.04     |



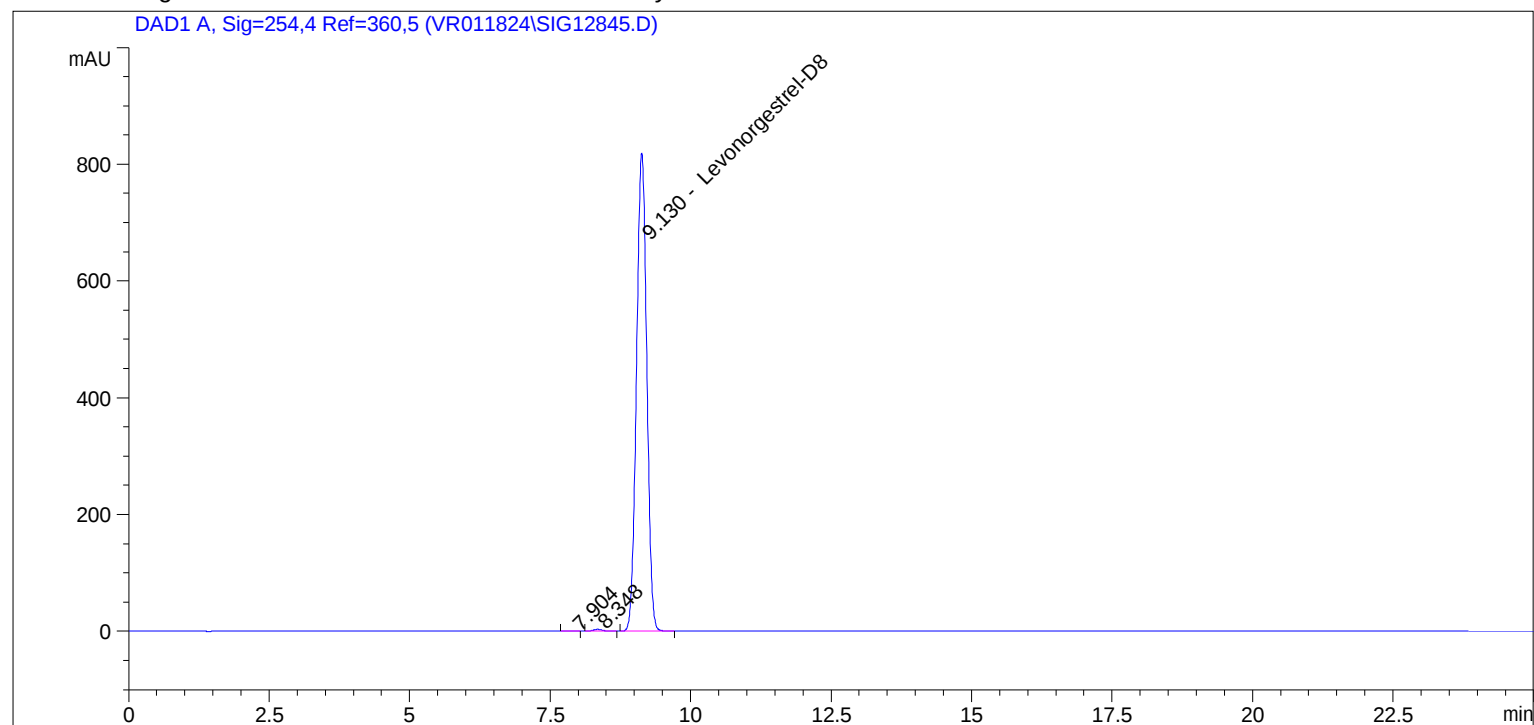
### Predicted Isotope Match Table

| Isotope | m/z      | Calc m/z | Diff (mDa) | Abund (%) | Calc Abund (%) | +/- |
|---------|----------|----------|------------|-----------|----------------|-----|
| 1       | 321.2657 | 321.2664 | -0.7       | 100.0     | 100.0          | 0.0 |
| 2       | 322.2696 | 322.2698 | -0.2       | 21.5      | 23.0           | 1.5 |
| 3       | 323.2723 | 323.2728 | -0.5       | 2.9       | 2.9            | 0.0 |



Sample Name: GR-5-207-1 spl-2

```
=====
Acq. Operator   :
Acq. Instrument : Instrument 1                Location : Vial 73
Injection Date  : 12/5/2024 1:50:01 PM
                                           Inj Volume : 10.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\VR120524_207.M
Last changed    : 12/5/2024 1:48:59 PM
Analysis Method : C:\CHEM32\1\METHODS\VR120524_207PM.M
Last changed    : 12/5/2024 2:26:31 PM by vrusu
=====
```



```
=====
                        Area Percent Report
=====
```

```
Sorted By           :      Signal
Calib. Data Modified :      12/5/2024 2:26:20 PM
Multiplier:         :      1.603e3
Dilution:           :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

Signal 1: DAD1 A, Sig=254,4 Ref=360,5

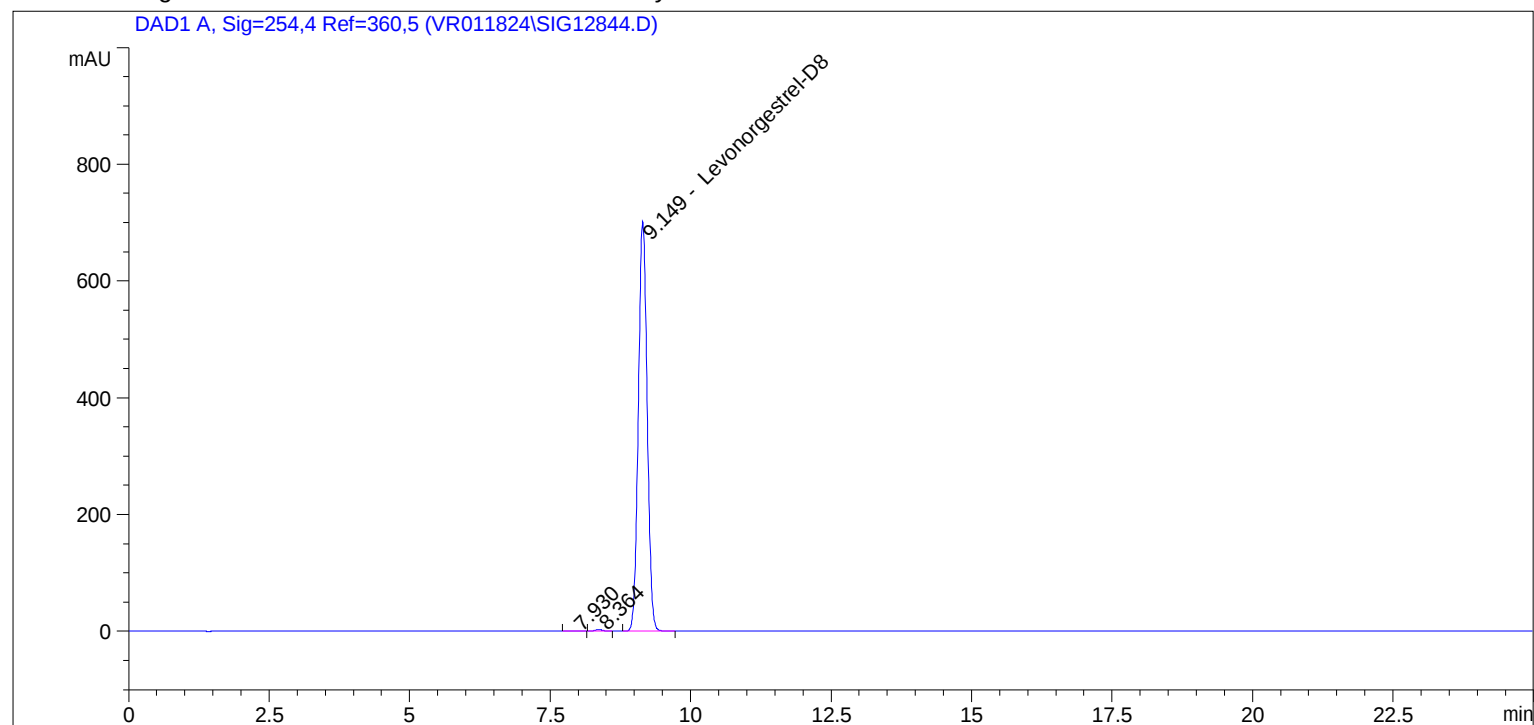
| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Area %  | Name              |
|--------|---------------|------|-------------|--------------|---------|-------------------|
| 1      | 7.904         | BB   | 0.1433      | 2.69566      | 0.0258  | ?                 |
| 2      | 8.348         | BB   | 0.1779      | 36.05347     | 0.3447  | ?                 |
| 3      | 9.130         | BB   | 0.2005      | 1.04202e4    | 99.6295 | Levonorgestrel-D8 |

Totals : 1.04590e4

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*** End of Report ***
=====
```

Sample Name: GR-5-207-1

```
=====
Acq. Operator   :
Acq. Instrument : Instrument 1                Location : Vial 72
Injection Date  : 12/5/2024 11:35:54 AM
                                           Inj Volume : 10.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\VR120524_207.M
Last changed    : 12/5/2024 11:34:53 AM
Analysis Method : C:\CHEM32\1\METHODS\VR120524_207PM.M
Last changed    : 12/5/2024 2:26:31 PM by vrusu
=====
```



```
=====
                        Area Percent Report
=====
```

```
Sorted By           :      Signal
Calib. Data Modified :      12/5/2024 2:26:20 PM
Multiplier:         :      1.603e3
Dilution:           :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

Signal 1: DAD1 A, Sig=254,4 Ref=360,5

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Area %  | Name              |
|--------|---------------|------|-------------|--------------|---------|-------------------|
| 1      | 7.930         | BB   | 0.1433      | 2.31571      | 0.0302  | ?                 |
| 2      | 8.364         | BV   | 0.1527      | 27.02629     | 0.3520  | ?                 |
| 3      | 9.149         | BB   | 0.1691      | 7649.00146   | 99.6179 | Levonorgestrel-D8 |

Totals : 7678.34347

```
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*** End of Report ***
=====
```