# Supporting Information

## Efficient solution-processable deep-red hot exciton emitter based on thiadiazole[3,4-c]pyridine for a simple electroluminescent device

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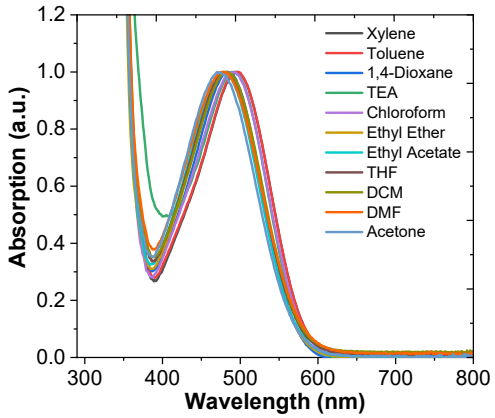



**Fig. S1** Normalized UV-Vis absorption spectra in different solvents

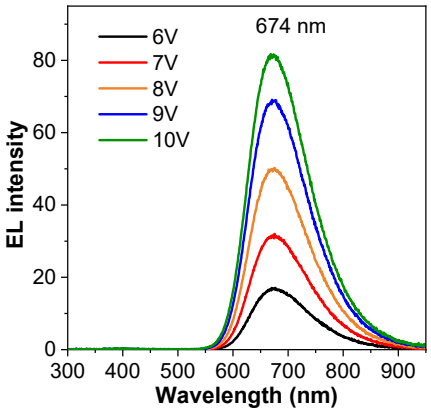



**Fig. S2** EL spectra of the OLED under different applied voltages

**Table S1** Excited states energy calculated by TD-DFT B3LYP/6-31G(d,p)

| State | Energy (eV) | Osc. Strength (*f*) | Transition character |
|---|---|---|---|
| S1 | 1.25 | 0.0006 | CT |
| S2 | 1.27 | 0.0001 | CT |
| S3 | 1.35 | 0.0001 | CT |
| S4 | 1.48 | 0.0000 | CT |
| S5 | 1.72 | 0.0000 | CT |
| T1 | 0.28 | - | LE+CT |
| T2 | 1.36 | - | CT |
| T3 | 1.44 | - | LE+CT |
| T4 | 1.51 | - | CT |
| T5 | 1.55 | - | CT |

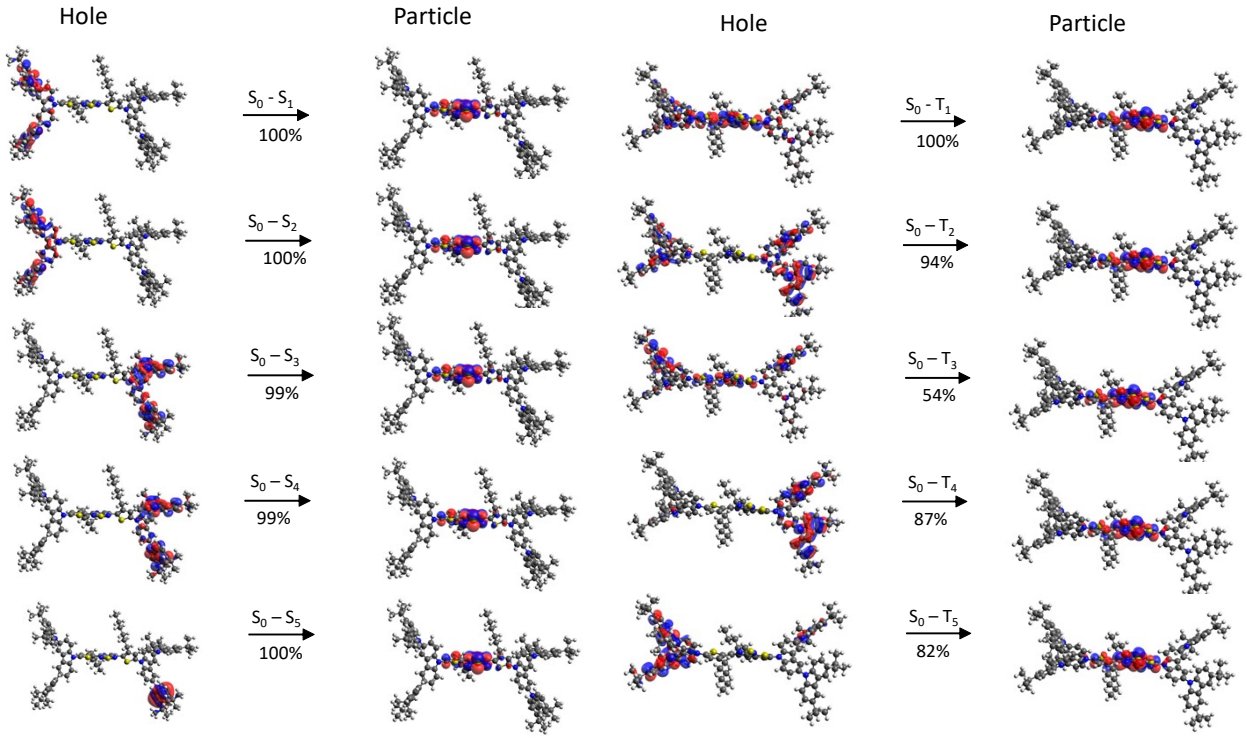
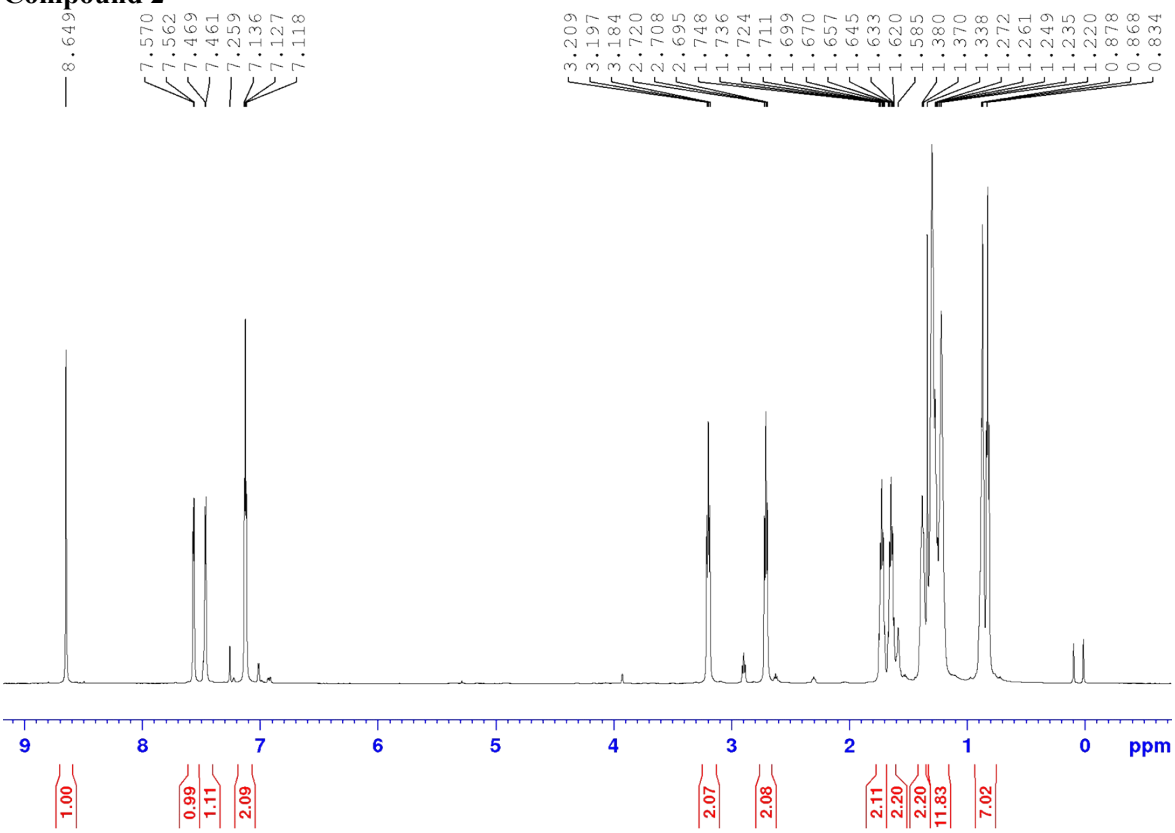
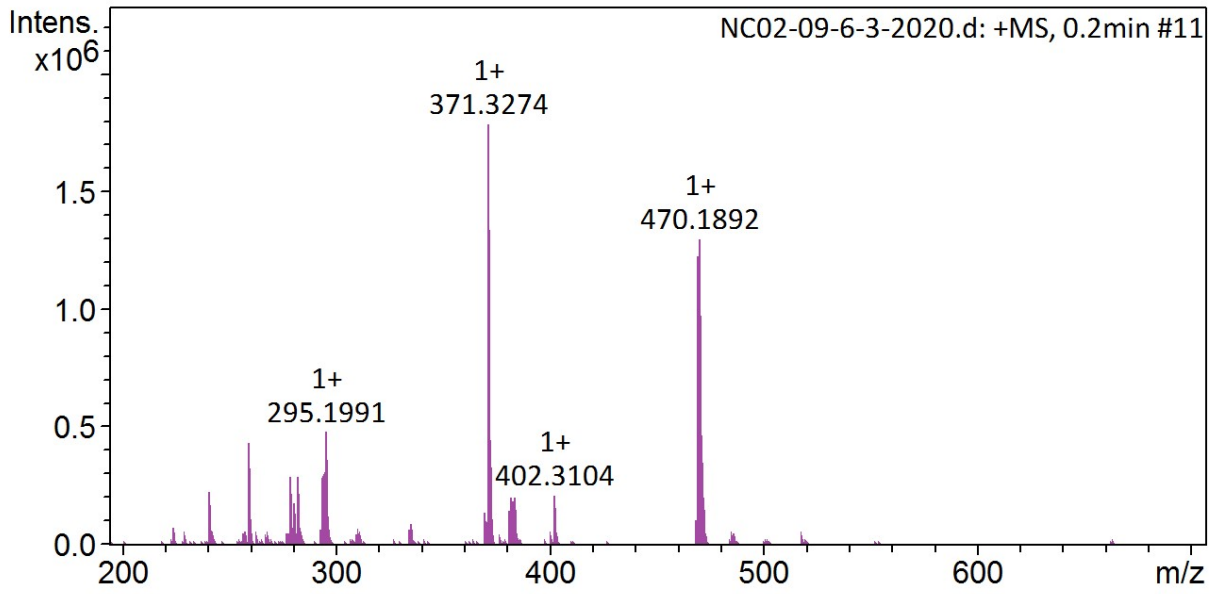



**Fig. S3** Copies of NMR and HRMS mass spectra

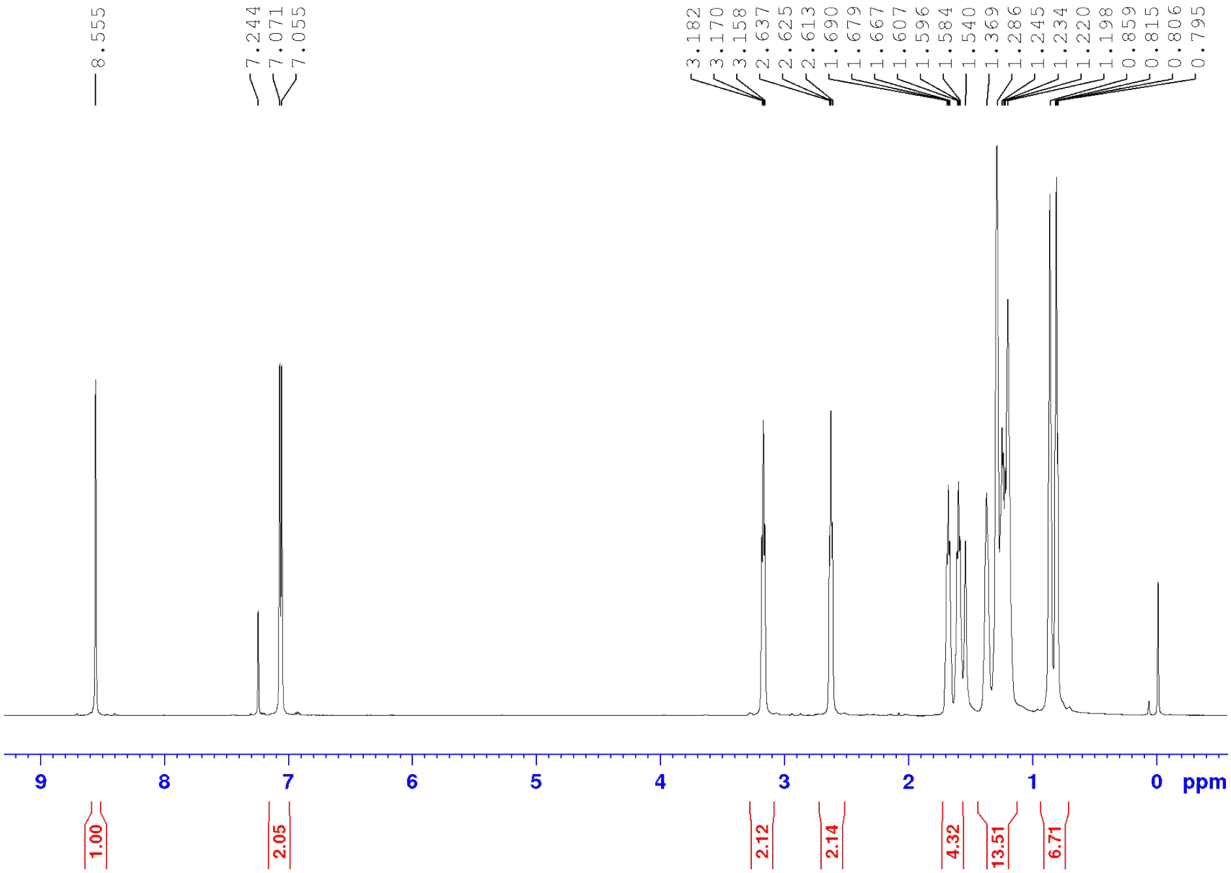
**Fig. S4** Copies of NMR and HRMS mass spectra

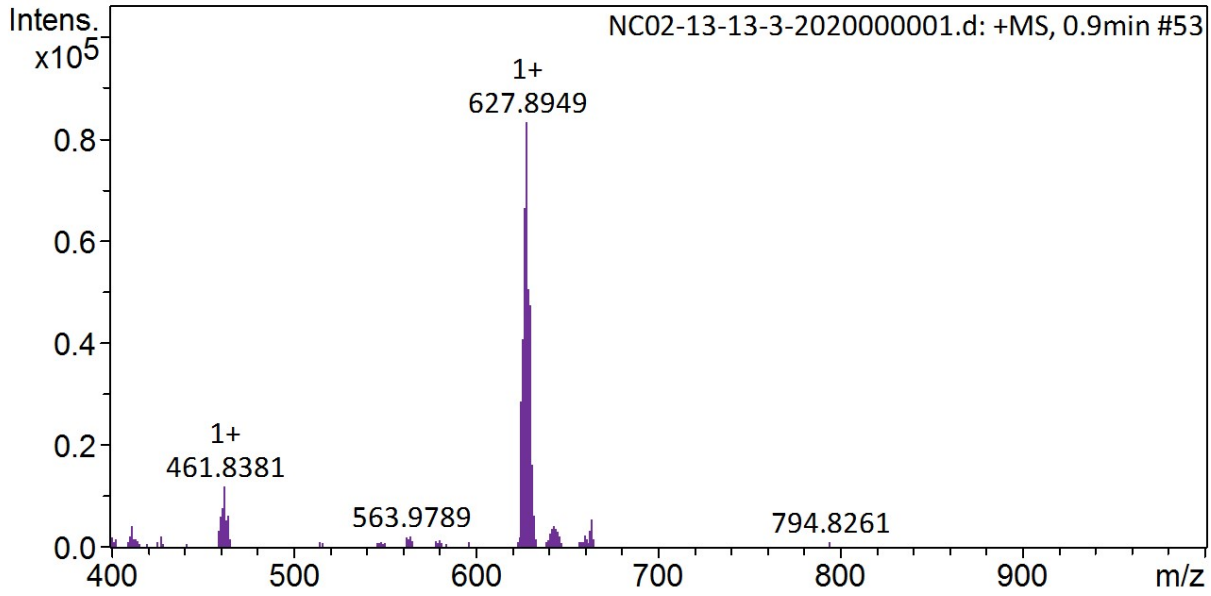
**Compound 2**



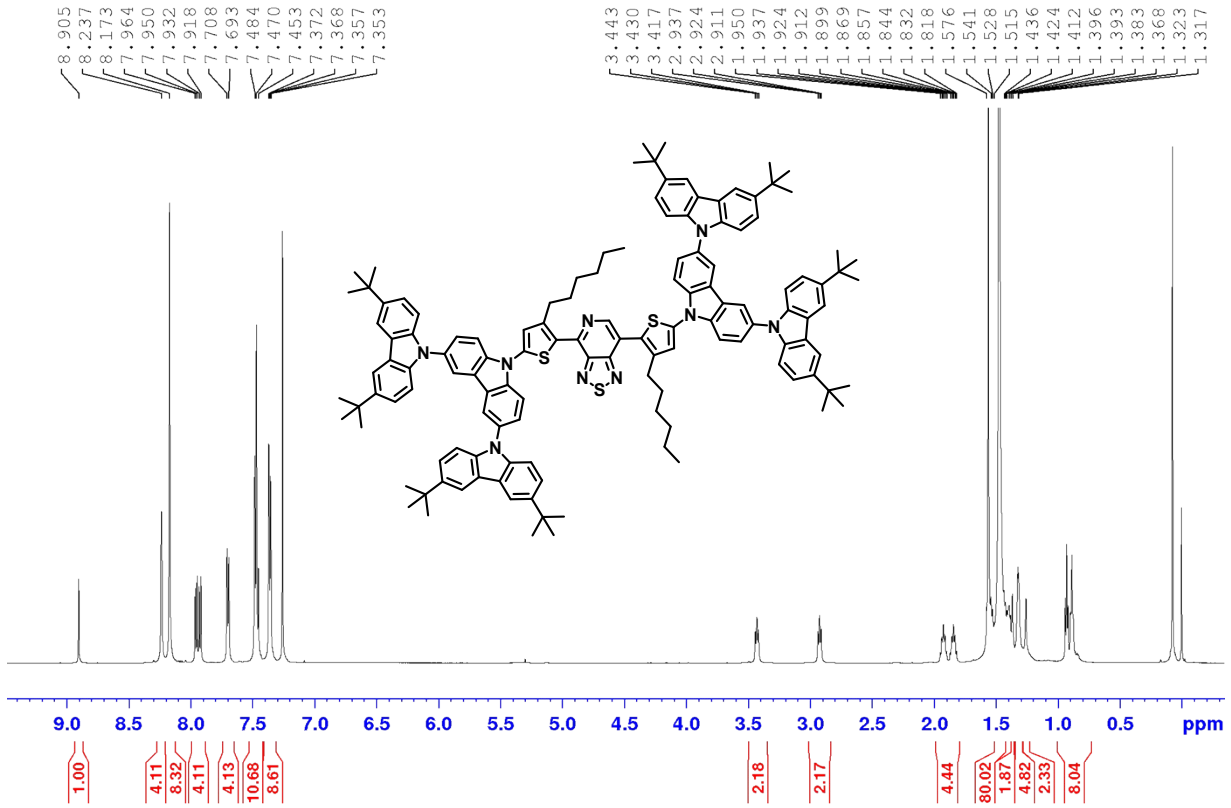



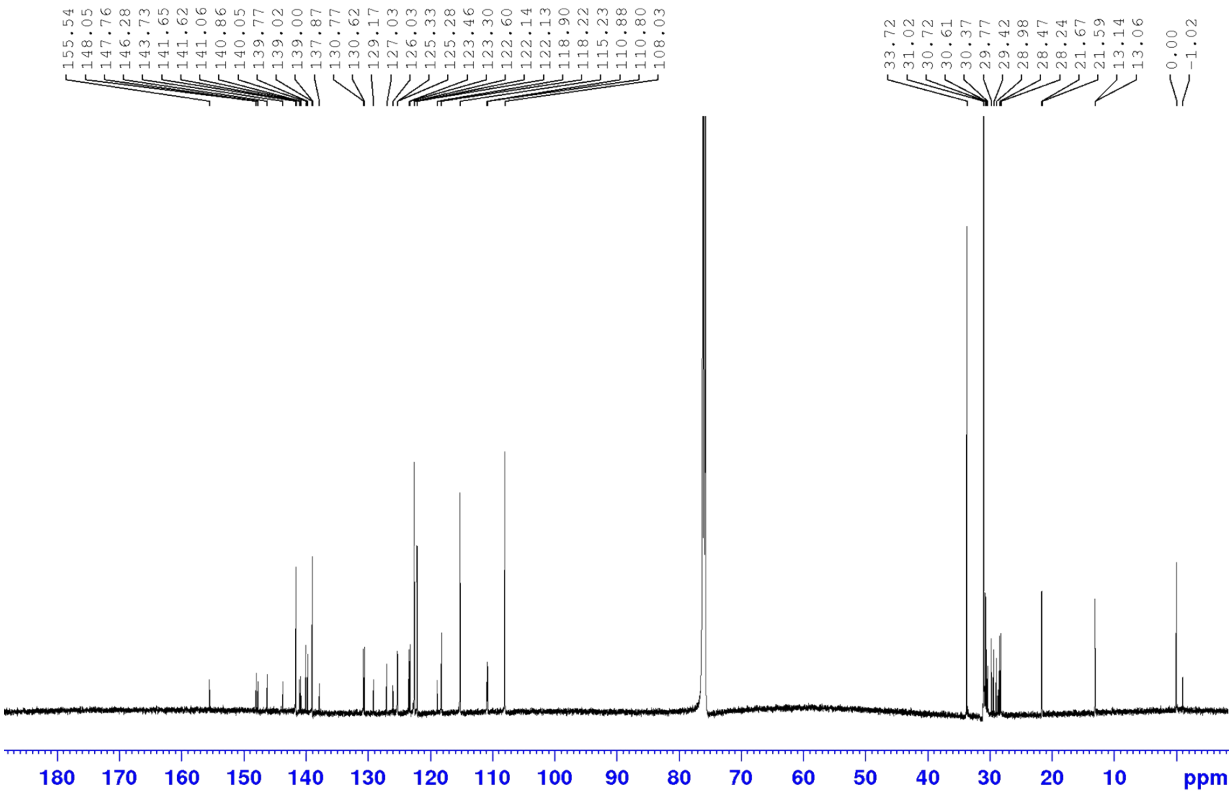
**Compound 3**

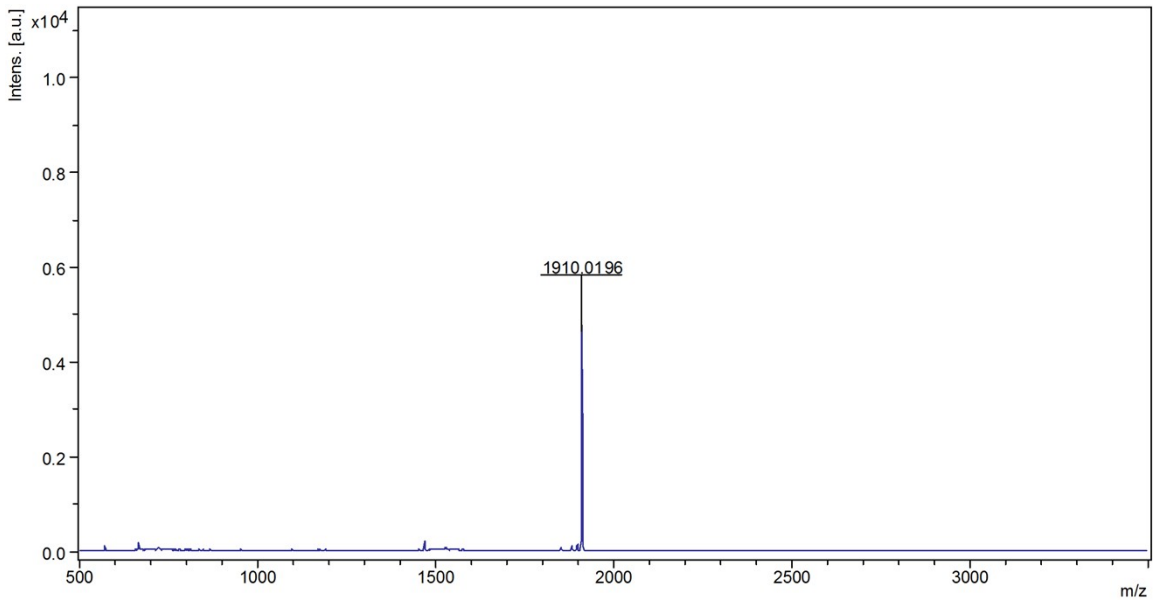

8.555
7.244
7.071
7.055
3.182
3.170
3.158
2.637
2.625
2.613
1.690
1.679
1.667
1.607
1.596
1.584
1.540
1.369
1.286
1.245
1.234
1.220
1.198
0.859
0.815
0.806
0.795
9
8
7
6
5
4
3
2
1
0
ppm
1.00
2.05
2.12
2.14
4.32
13.51
6.71


Intens.
x10^5
NC02-13-13-3-2020000001.d: +MS, 0.9min #53
1+
627.8949
1+
461.8381
563.9789
794.8261
0.0
0.2
0.4
0.6
0.8
400
500
600
700
800
900
m/z

**CCTPy**


8.905
8.237
8.173
7.964
7.950
7.932
7.918
7.708
7.693
7.484
7.470
7.453
7.372
7.368
7.357
7.353
3.443
3.430
3.417
2.937
2.924
2.911
1.950
1.937
1.924
1.912
1.899
1.869
1.857
1.844
1.832
1.818
1.576
1.541
1.528
1.515
1.436
1.424
1.412
1.396
1.393
1.383
1.368
1.323
1.317
9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 ppm
1.00
4.11
8.32
4.11
4.13
10.68
8.61
2.18
2.17
4.44
80.02
1.87
4.82
2.33
8.04


155.54
148.05
147.76
146.28
143.73
141.65
141.62
141.06
140.86
140.05
139.77
139.02
139.00
137.87
130.77
130.62
129.17
127.03
126.03
125.33
125.28
123.46
123.30
122.60
122.14
122.13
118.90
118.22
115.23
110.88
110.80
108.03
33.72
31.02
30.72
30.61
30.37
29.77
29.42
28.98
28.47
28.24
21.67
21.59
13.14
13.06
0.00
-1.02
180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm


Intens. [a.u.]
x10^4
1.0
0.8
0.6
0.4
0.2
0.0
1910.0196
500
1000
1500
2000
2500
3000
m/z