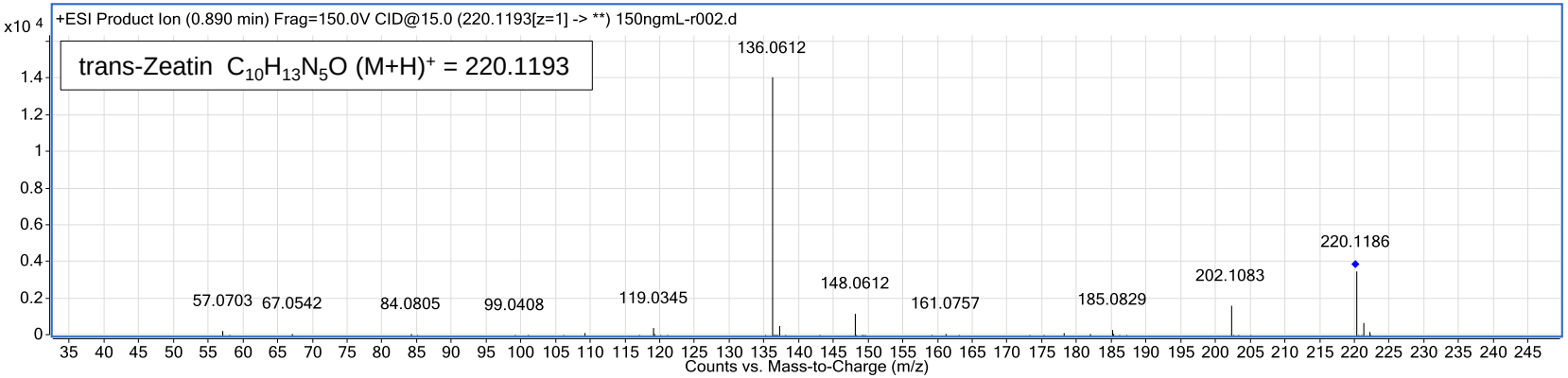
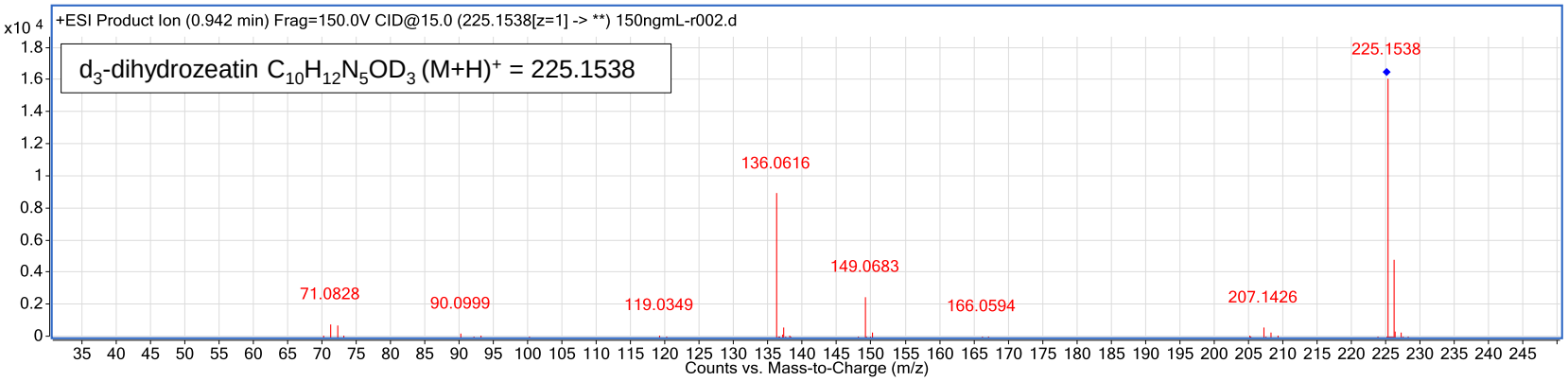
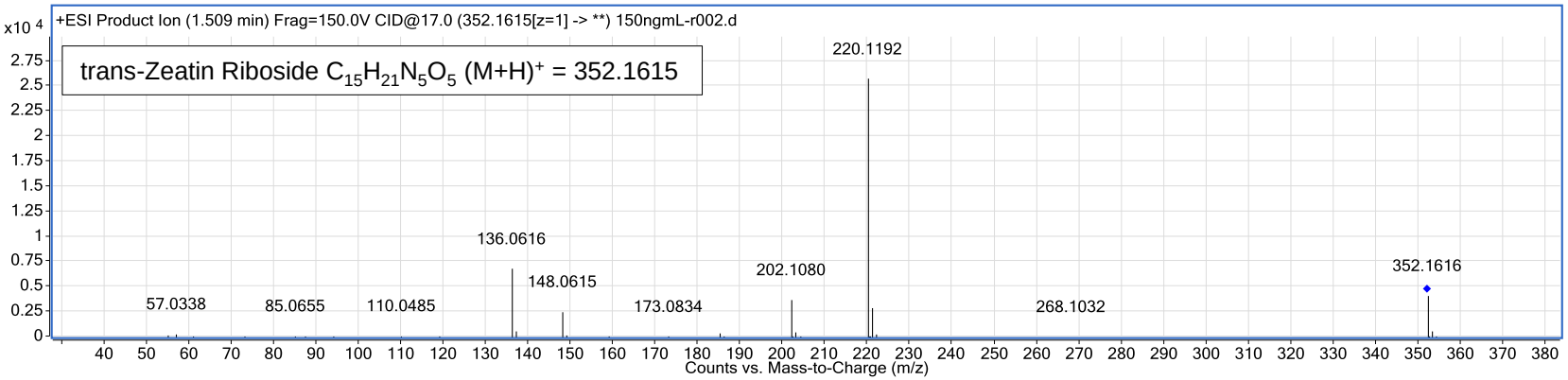
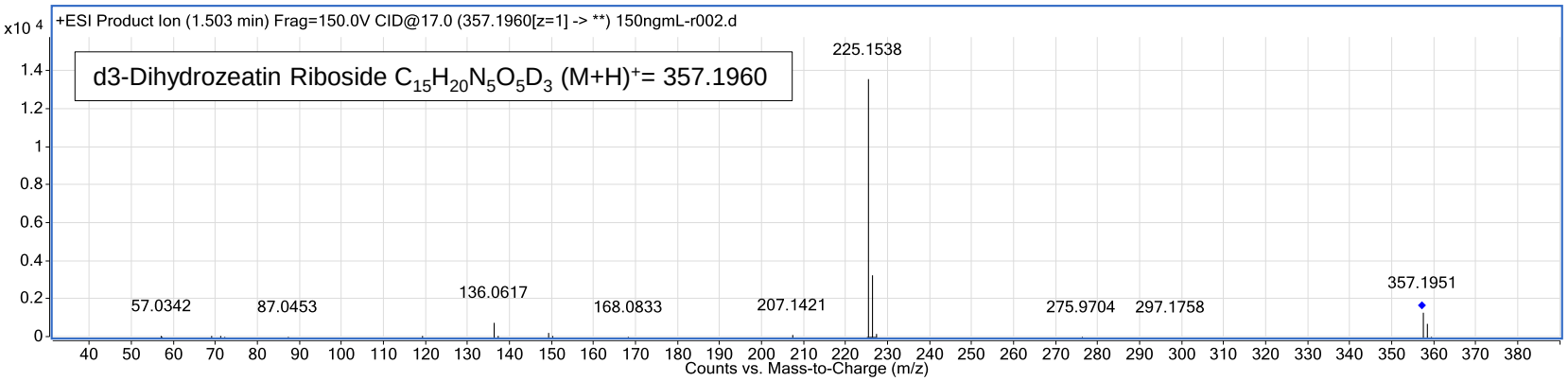
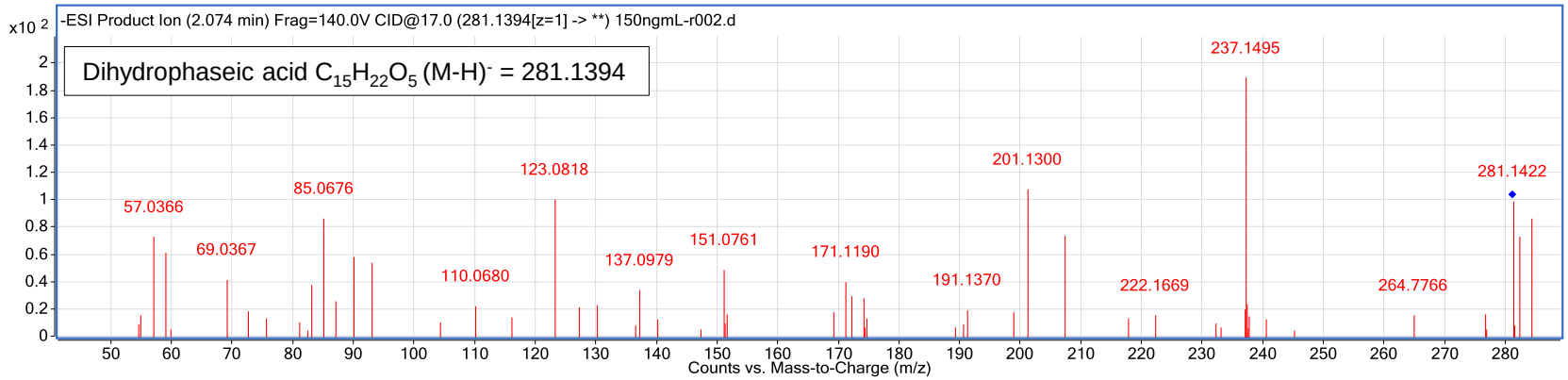
Supplemental Information S1: Product ion spectra of plant hormones standards and internal standards (deuterated compounds).

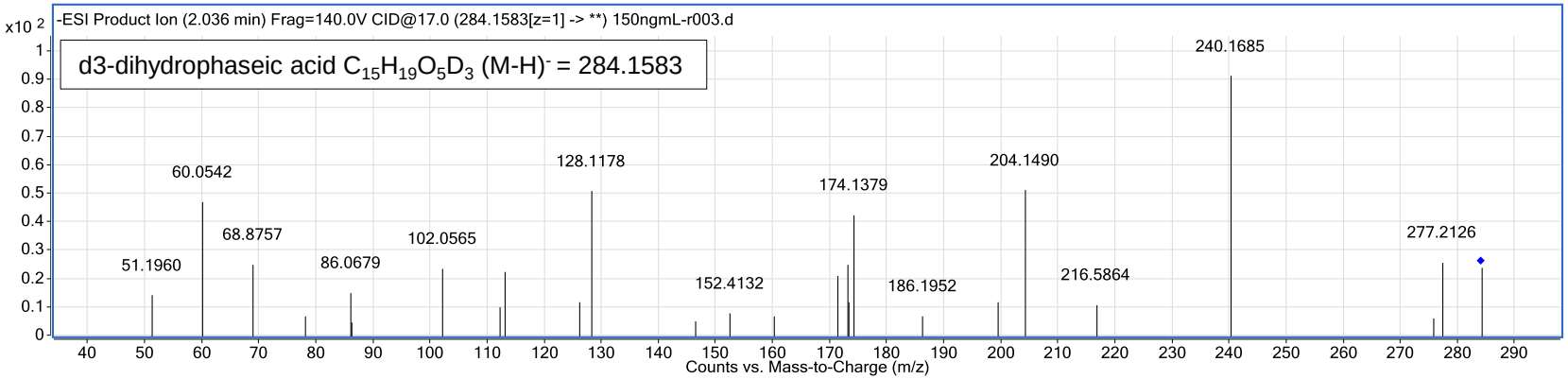


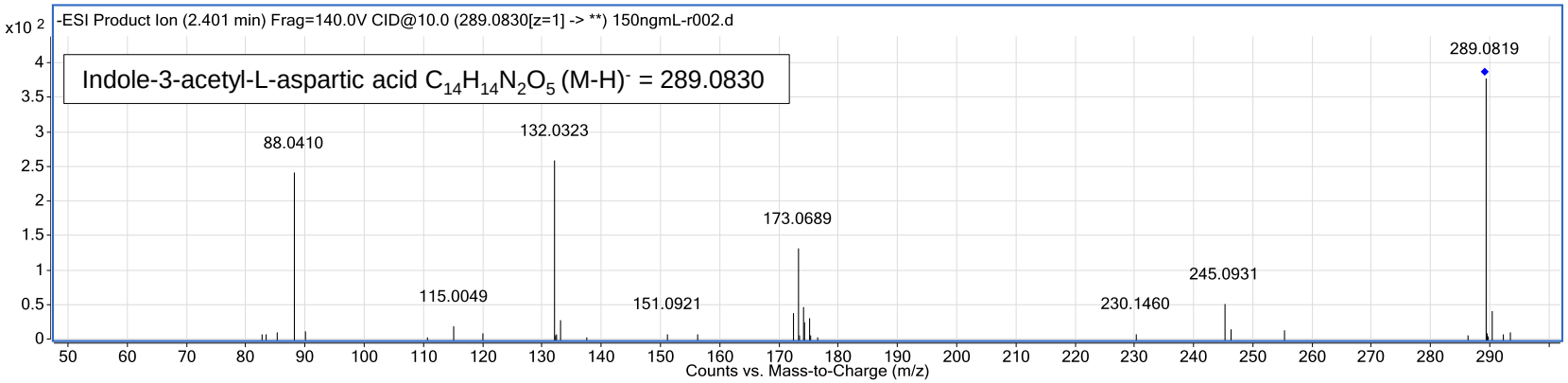


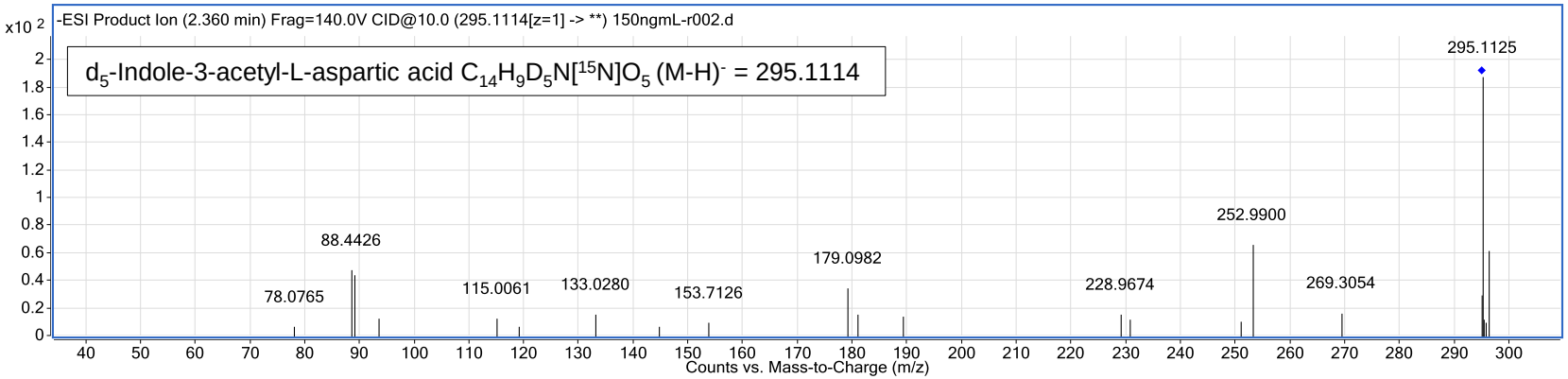

+ESI Product Ion (1.509 min) Frag=150.0V CID@17.0 (352.1615[z=1] -> **) 150ngmL-r002.d
trans-Zeatin Riboside $C_{15}H_{21}N_5O_5$ $(M+H)^+$ = 352.1615
x10 4
220.1192
136.0616
148.0615
202.1080
352.1616
57.0338
85.0655
110.0485
173.0834
268.1032
Counts vs. Mass-to-Charge (m/z)

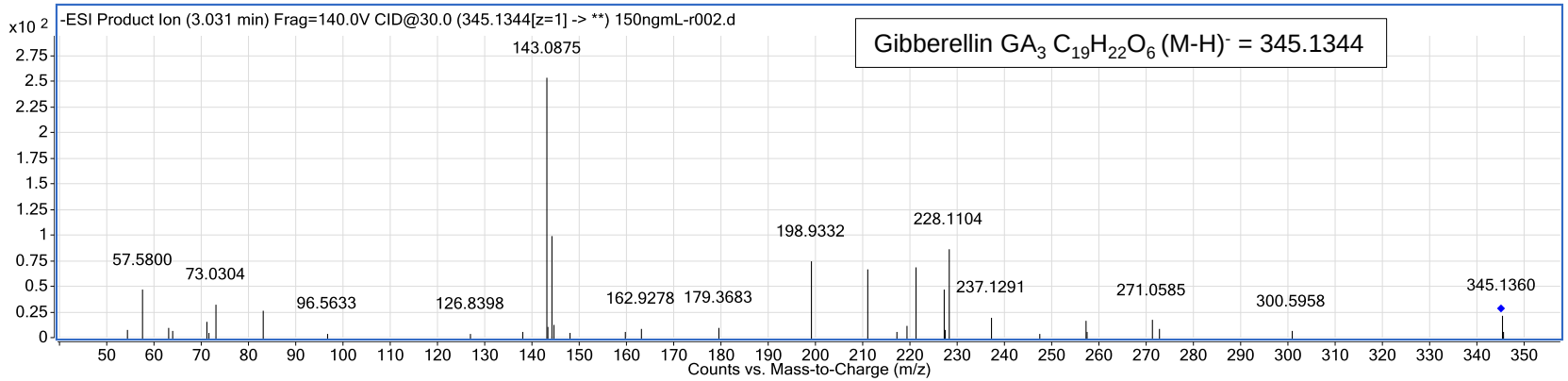

+ESI Product Ion (1.503 min) Frag=150.0V CID@17.0 (357.1960[z=1] -> **) 150ngmL-r002.d
d3-Dihydrozeatin Riboside $C_{15}H_{20}N_5O_5D_3$ $(M+H)^+$= 357.1960
x10 4
225.1538
57.0342
87.0453
136.0617
168.0833
207.1421
275.9704
297.1758
357.1951
Counts vs. Mass-to-Charge (m/z)

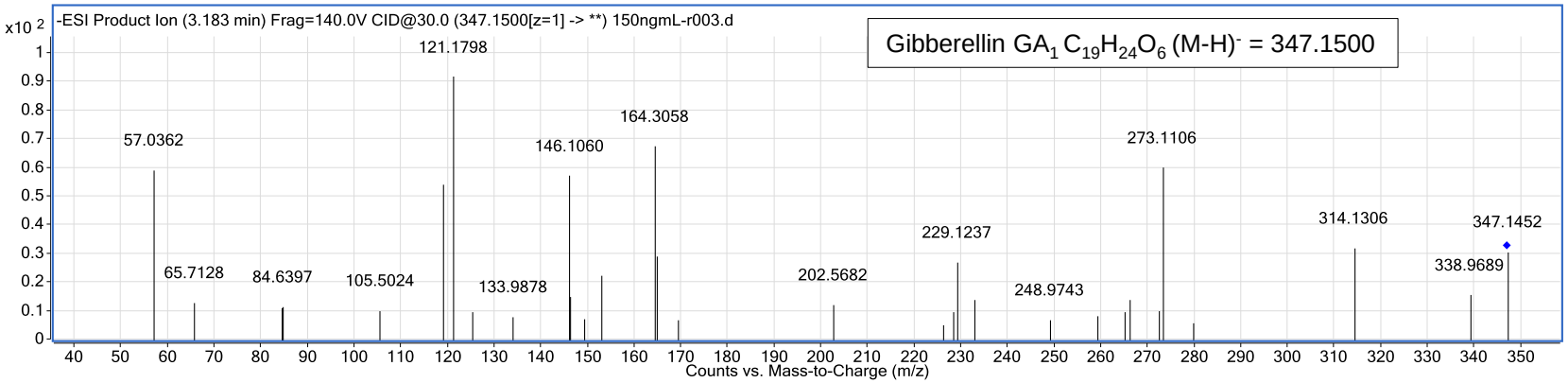

-ESI Product Ion (2.074 min) Frag=140.0V CID@17.0 (281.1394[z=1] -> **) 150ngmL-r002.d
Dihydrophaseic acid $C_{15}H_{22}O_5$ $(M-H)^-$ = 281.1394
x10 2
237.1495
201.1300
281.1422
123.0818
85.0676
57.0366
69.0367
151.0761
171.1190
137.0979
110.0680
191.1370
222.1669
264.7766
Counts vs. Mass-to-Charge (m/z)

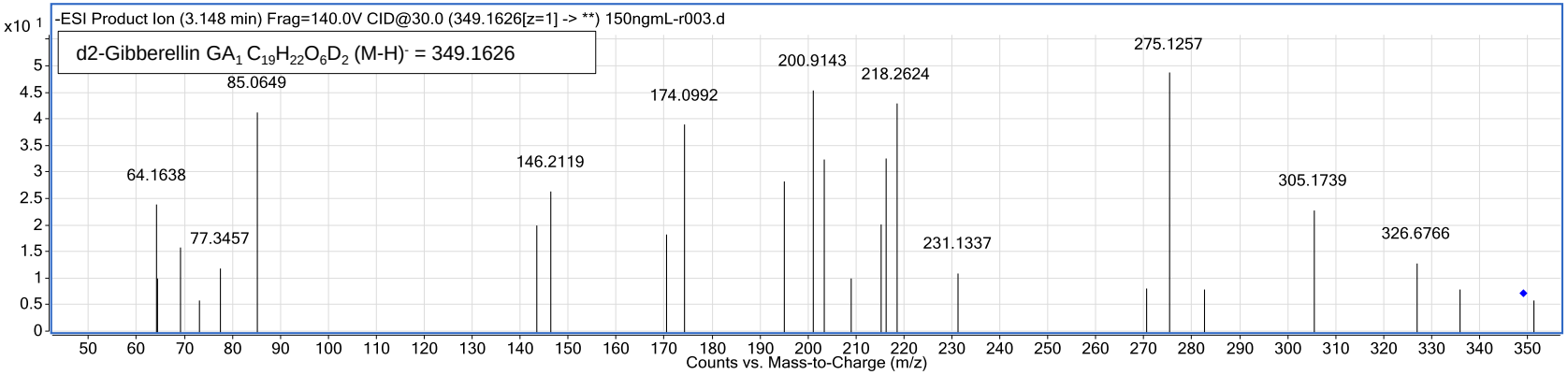

-ESI Product Ion (2.036 min) Frag=140.0V CID@17.0 (284.1583[z=1] -> **) 150ngmL-r003.d
d3-dihydrophaseic acid $C_{15}H_{19}O_5D_3$ $(M-H)^-$ = 284.1583
x10 2
240.1685
60.0542
128.1178
204.1490
174.1379
68.8757
102.0565
277.2126
51.1960
86.0679
152.4132
186.1952
216.5864
Counts vs. Mass-to-Charge (m/z)

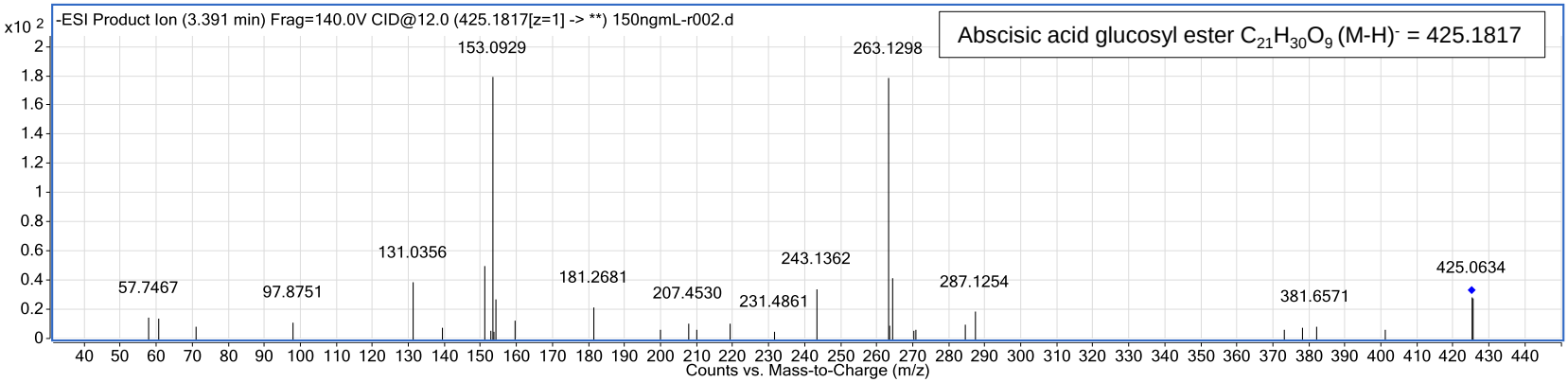

-ESI Product Ion (2.401 min) Frag=140.0V CID@10.0 (289.0830[z=1] -> **) 150ngmL-r002.d
Indole-3-acetyl-L-aspartic acid $C_{14}H_{14}N_2O_5$ $(M-H)^-$ = 289.0830
x10 2
289.0819
88.0410
132.0323
173.0689
245.0931
115.0049
151.0921
230.1460
Counts vs. Mass-to-Charge (m/z)

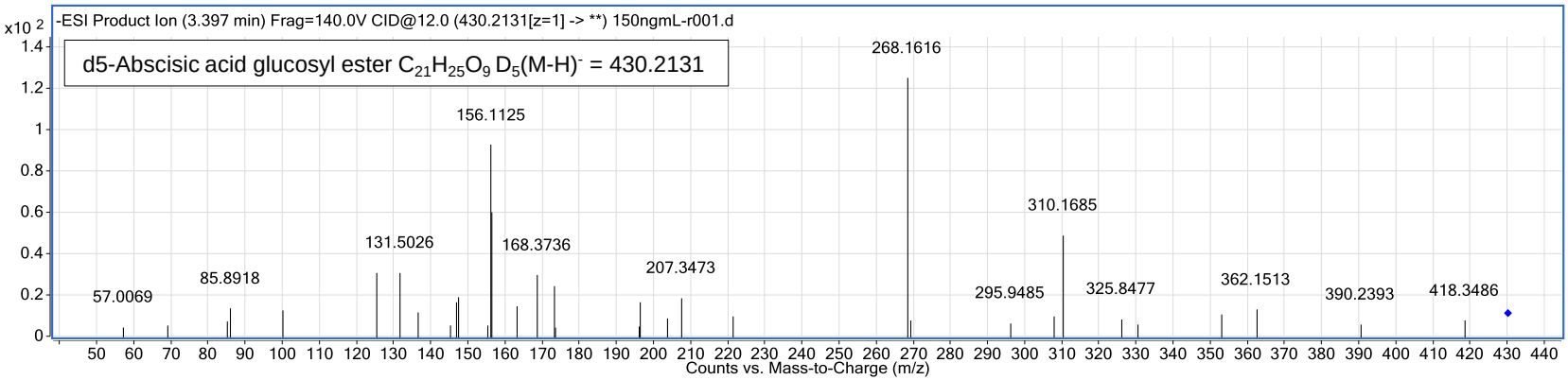

-ESI Product Ion (2.360 min) Frag=140.0V CID@10.0 (295.1114[z=1] -> **) 150ngmL-r002.d
d_5-Indole-3-acetyl-L-aspartic acid $C_{14}H_9D_5N[^{15}N]O_5$ $(M-H)^-$ = 295.1114
x10 2
295.1125
252.9900
88.4426
179.0982
78.0765
115.0061
133.0280
153.7126
228.9674
269.3054
Counts vs. Mass-to-Charge (m/z)

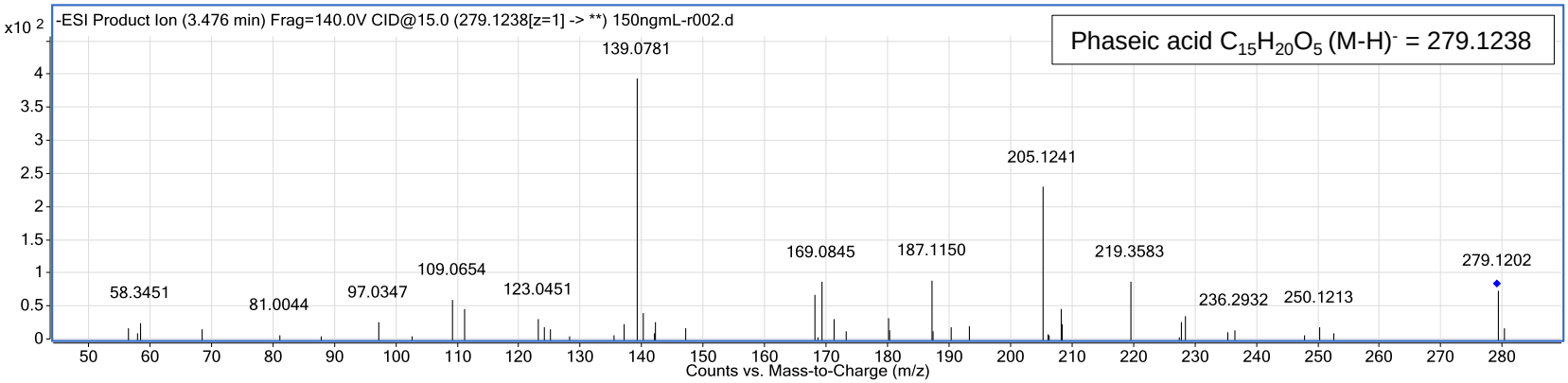

-ESI Product Ion (3.031 min) Frag=140.0V CID@30.0 (345.1344[z=1] -> **) 150ngmL-r002.d
Gibberellin GA3 C19H22O6 (M-H)- = 345.1344
x10 2
143.0875
198.9332
228.1104
57.5800
73.0304
96.5633
126.8398
162.9278
179.3683
237.1291
271.0585
300.5958
345.1360
Counts vs. Mass-to-Charge (m/z)

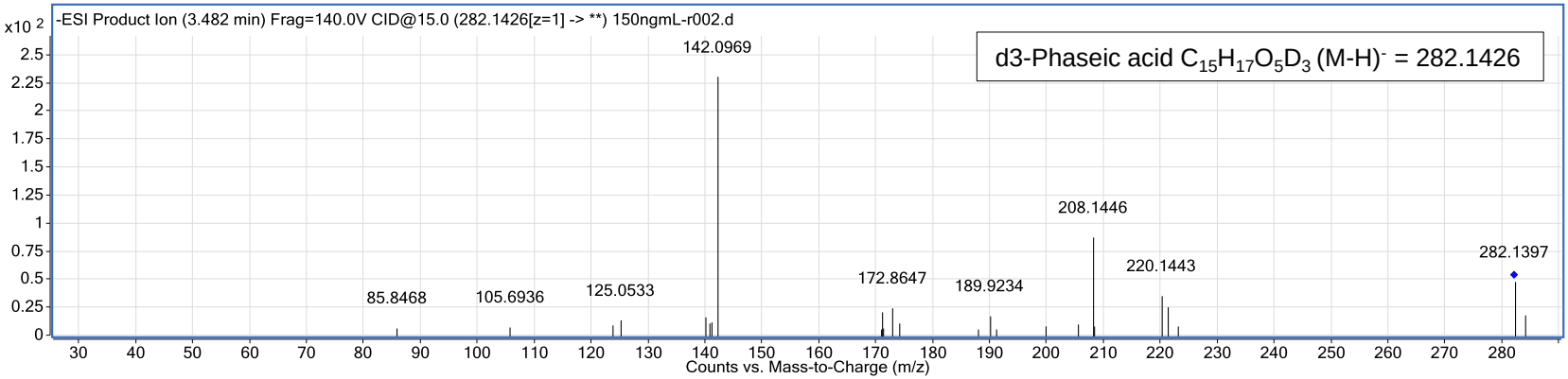

-ESI Product Ion (3.183 min) Frag=140.0V CID@30.0 (347.1500[z=1] -> **) 150ngmL-r003.d
Gibberellin GA1 C19H24O6 (M-H)- = 347.1500
x10 2
121.1798
164.3058
57.0362
146.1060
273.1106
314.1306
347.1452
229.1237
65.7128
84.6397
105.5024
133.9878
202.5682
248.9743
338.9689
Counts vs. Mass-to-Charge (m/z)

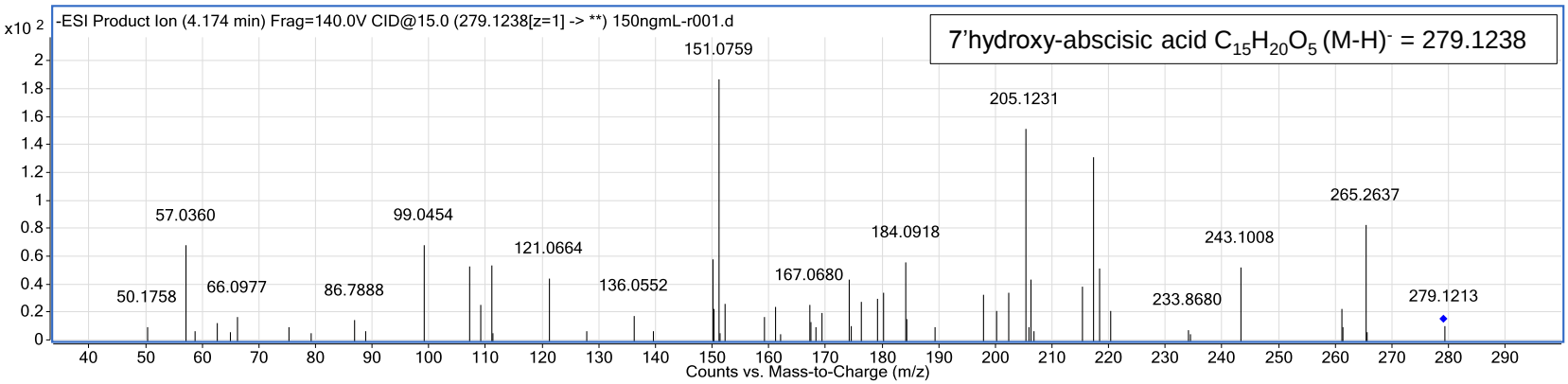

-ESI Product Ion (3.148 min) Frag=140.0V CID@30.0 (349.1626[z=1] -> **) 150ngmL-r003.d
d2-Gibberellin GA1 C19H22O6D2 (M-H)- = 349.1626
x10 1
275.1257
200.9143
218.2624
85.0649
174.0992
64.1638
146.2119
305.1739
77.3457
231.1337
326.6766
Counts vs. Mass-to-Charge (m/z)

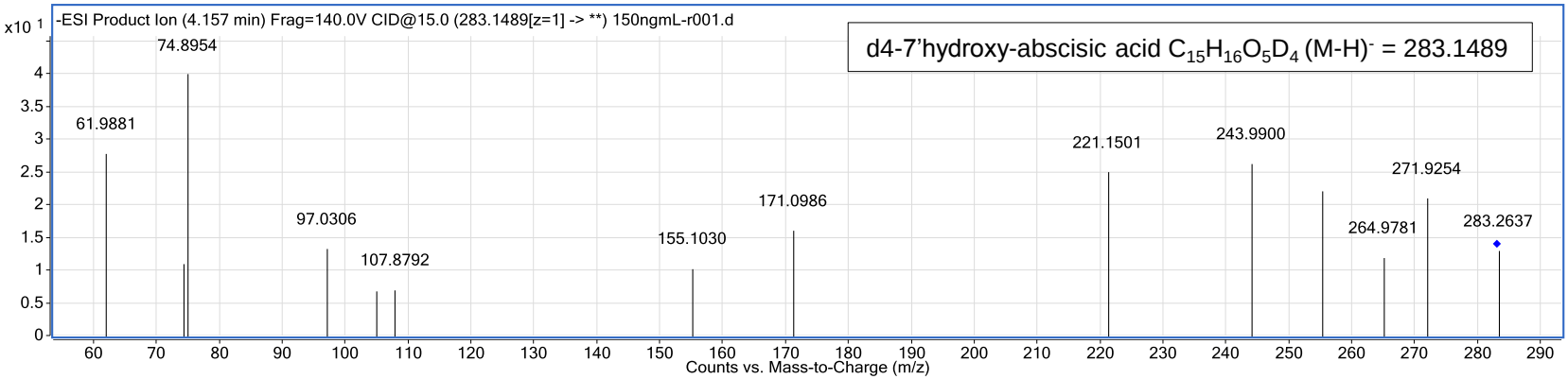

-ESI Product Ion (3.391 min) Frag=140.0V CID@12.0 (425.1817[z=1] -> **) 150ngmL-r002.d
Abscisic acid glucosyl ester $C_{21}H_{30}O_9$ $(M-H)^-$ = 425.1817
x10 2
153.0929
263.1298
131.0356
243.1362
425.0634
57.7467
97.8751
181.2681
207.4530
231.4861
287.1254
381.6571
Counts vs. Mass-to-Charge (m/z)

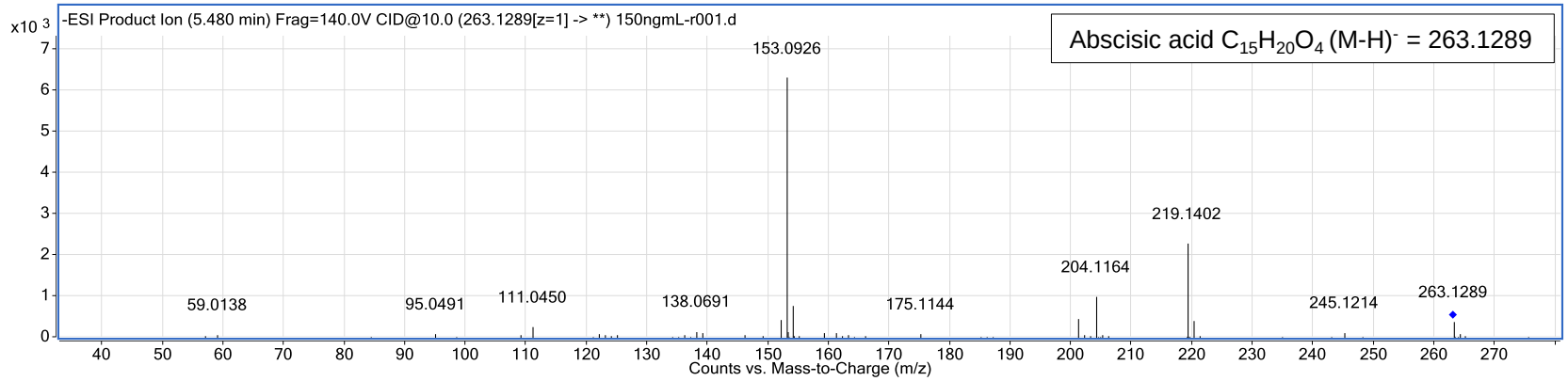

-ESI Product Ion (3.397 min) Frag=140.0V CID@12.0 (430.2131[z=1] -> **) 150ngmL-r001.d
d5-Abscisic acid glucosyl ester $C_{21}H_{25}O_9$ $D_5(M-H)^-$ = 430.2131
x10 2
268.1616
156.1125
310.1685
131.5026
168.3736
207.3473
85.8918
57.0069
295.9485
325.8477
362.1513
390.2393
418.3486
Counts vs. Mass-to-Charge (m/z)

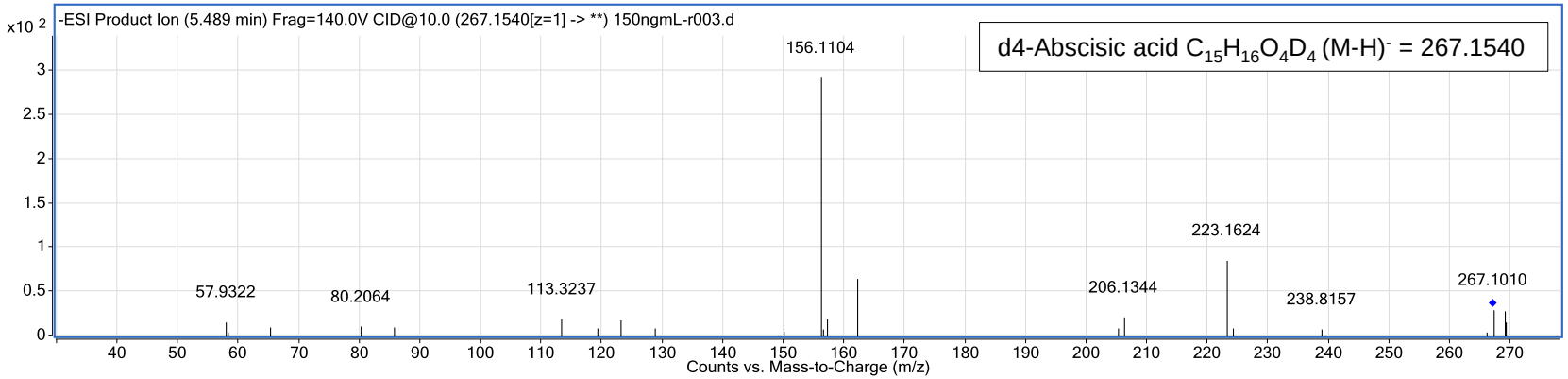

-ESI Product Ion (3.476 min) Frag=140.0V CID@15.0 (279.1238[z=1] -> **) 150ngmL-r002.d
Phaseic acid $C_{15}H_{20}O_5$ $(M-H)^-$ = 279.1238
x10 2
139.0781
205.1241
169.0845
187.1150
219.3583
279.1202
109.0654
58.3451
81.0044
97.0347
123.0451
236.2932
250.1213
Counts vs. Mass-to-Charge (m/z)

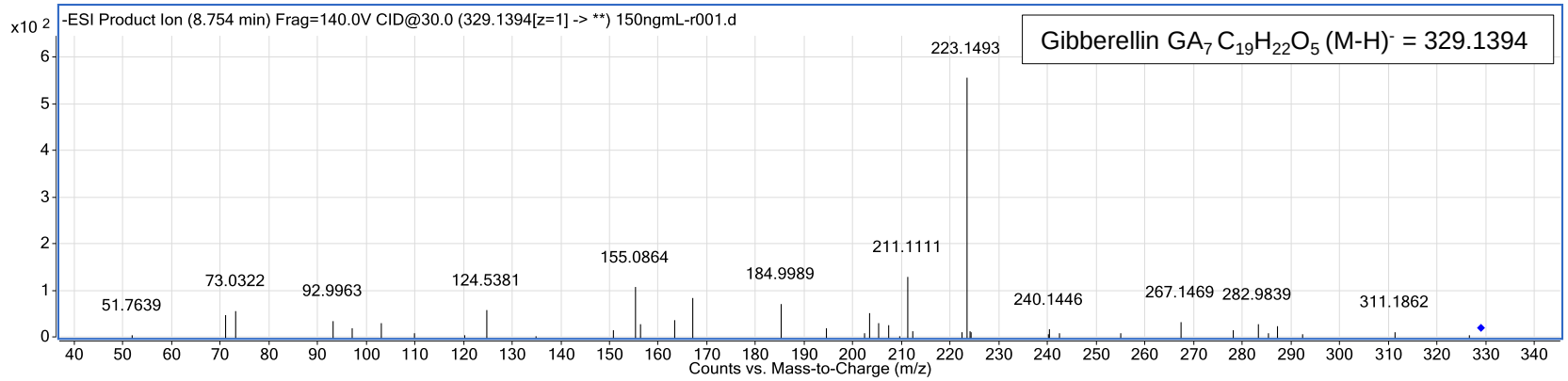

-ESI Product Ion (3.482 min) Frag=140.0V CID@15.0 (282.1426[z=1] -> **) 150ngmL-r002.d
d3-Phaseic acid $C_{15}H_{17}O_5D_3$ $(M-H)^-$ = 282.1426
142.0969
208.1446
282.1397
220.1443
172.8647
189.9234
85.8468
105.6936
125.0533
Counts vs. Mass-to-Charge (m/z)

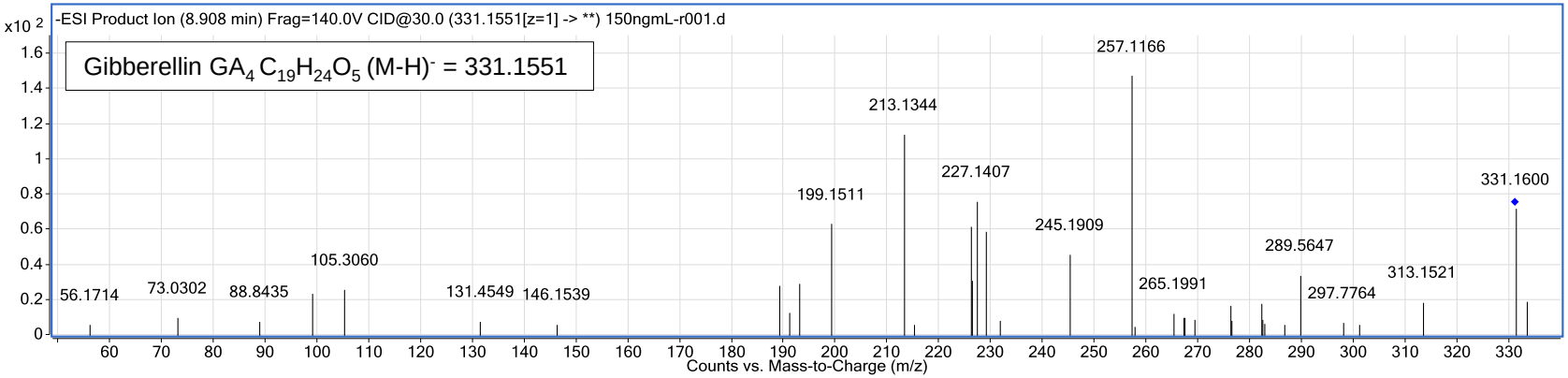

-ESI Product Ion (4.174 min) Frag=140.0V CID@15.0 (279.1238[z=1] -> **) 150ngmL-r001.d
7'hydroxy-abscisic acid $C_{15}H_{20}O_5$ $(M-H)^-$ = 279.1238
151.0759
205.1231
265.2637
57.0360
99.0454
184.0918
243.1008
121.0664
167.0680
50.1758
66.0977
86.7888
136.0552
233.8680
279.1213
Counts vs. Mass-to-Charge (m/z)

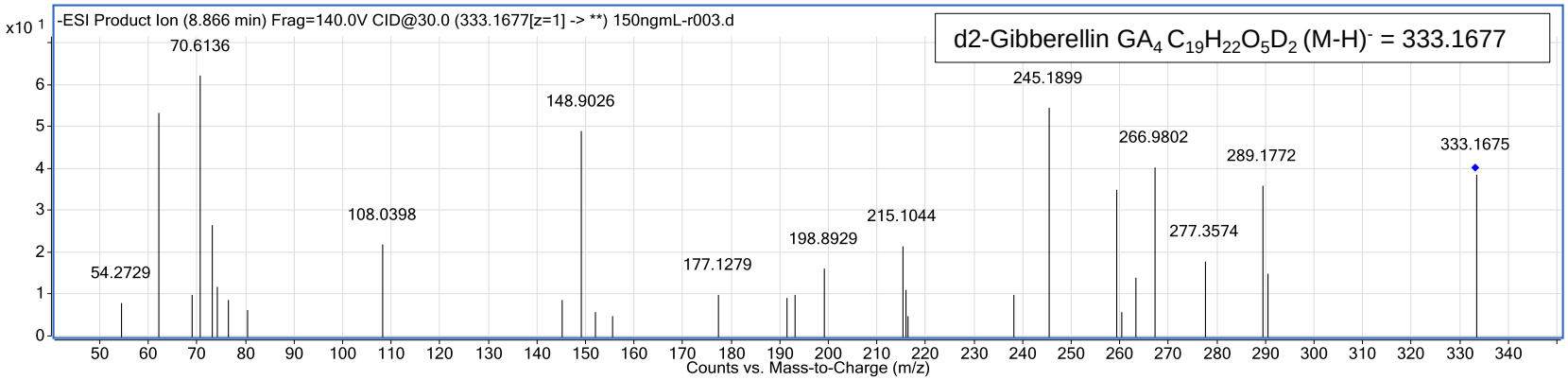

-ESI Product Ion (4.157 min) Frag=140.0V CID@15.0 (283.1489[z=1] -> **) 150ngmL-r001.d
d4-7'hydroxy-abscisic acid $C_{15}H_{16}O_5D_4$ $(M-H)^-$ = 283.1489
74.8954
61.9881
221.1501
243.9900
271.9254
171.0986
97.0306
155.1030
264.9781
283.2637
107.8792
Counts vs. Mass-to-Charge (m/z)


-ESI Product Ion (5.480 min) Frag=140.0V CID@10.0 (263.1289[z=1] -> **) 150ngmL-r001.d
Abscisic acid $C_{15}H_{20}O_4$ $(M-H)^-$ = 263.1289
x10 3
153.0926
219.1402
204.1164
59.0138
95.0491
111.0450
138.0691
175.1144
245.1214
263.1289
Counts vs. Mass-to-Charge (m/z)


-ESI Product Ion (5.489 min) Frag=140.0V CID@10.0 (267.1540[z=1] -> **) 150ngmL-r003.d
d4-Abscisic acid $C_{15}H_{16}O_4D_4$ $(M-H)^-$ = 267.1540
x10 2
156.1104
223.1624
57.9322
80.2064
113.3237
206.1344
238.8157
267.1010
Counts vs. Mass-to-Charge (m/z)


-ESI Product Ion (8.754 min) Frag=140.0V CID@30.0 (329.1394[z=1] -> **) 150ngmL-r001.d
Gibberellin GA_7 $C_{19}H_{22}O_5$ $(M-H)^-$ = 329.1394
x10 2
223.1493
211.1111
155.0864
184.9989
73.0322
92.9963
124.5381
51.7639
240.1446
267.1469
282.9839
311.1862
Counts vs. Mass-to-Charge (m/z)


-ESI Product Ion (8.908 min) Frag=140.0V CID@30.0 (331.1551[z=1] -> **) 150ngmL-r001.d
Gibberellin GA4 C19H24O5 (M-H)- = 331.1551
x10 2
257.1166
213.1344
227.1407
199.1511
331.1600
245.1909
289.5647
105.3060
313.1521
265.1991
297.7764
56.1714
73.0302
88.8435
131.4549
146.1539
Counts vs. Mass-to-Charge (m/z)


-ESI Product Ion (8.866 min) Frag=140.0V CID@30.0 (333.1677[z=1] -> **) 150ngmL-r003.d
d2-Gibberellin GA4 C19H22O5D2 (M-H)- = 333.1677
x10 1
70.6136
245.1899
148.9026
266.9802
333.1675
289.1772
108.0398
215.1044
277.3574
198.8929
177.1279
54.2729
Counts vs. Mass-to-Charge (m/z)