Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information

Table of contents:

S1. Materials and method

General Information: The chemicals were procured from S.D. Fine, India and Merck Ltd. without additional purification. SEM image along with EDS was taken on JEOL, JSM-6330 LA taken at 20.0 kV and 1.0000 nA. TPD and BET surface area has been identified by N2 adsorption at 77 K preformed on a Quanta chrome CHEMBET 3000 instrument. The X-ray powder diffraction patterns of catalyst was recorded on Bruker 8D advance XRD using Cu-Kα radiation of wavelength=1.54056 A˚. Thin layer chromatography (TLC) was performed on Merck-pre-coated silica gel 60-F254 plates. FT-IR spectrum of catalyst was recorded on JASCO FT-IR-4100. A Retsch 01.462.0220 Agate Grinding Jar for Planetary Ball Mill 100 having 250 mL Capacity. All the products are identified compounds and their physical information, FT-IR, mass spectra and 1H NMR was basically the same with those of genuine samples.

S2. Preparation of catalyst

A combination of sodium dodecyl sulphate (0.720 gm, 2.5 mmol) and sodium hydroxide (10 mL, 0.1N) in distilled water was added to a magnetically stirred lead nitrate (0.662 gm, 2 mmol) in methanol (10 ml). The reaction combination was agitated for 2 h at 30 ^{0}C. The whitish polycrystalline product was formed which was filtered, washed with distilled water (3x2 ml) and dried at 120 ^{0}C for 2 h. The white solid material was calcined at 650 ^{0}C for 2 h. During this process, the white PbO NPs turned to pale yellow colour.

S3. General Procedure for synthesis of xanthenedione derivatives using ball milling technique: Representative experimental procedure for the synthesis of 7-(3,4-dimethoxyphenyl)-6H-benzo[h] [1,3]dioxolo[4,5-b] xanthene-5,6(7H)-dione (2A):

A mixture of 3,4-dimethoxybenzaldehyde aldehydes (166.2 mg, 1 mmol), 2-hydroxy-1,4-naphthoquinone (138.1 mg, 1 mmol), 3,4-methylenedioxyphenol (171.1 mg, 1.0 mmol) and PbO NPs (25 mg, 15 mol %) was taken in 25 ml stainless steel beaker and ball-milling was done at 600 rpm with six balls (d = 10 mm) for 60 min. The ball-milling was carried out at inverted rotation directions, with the time interval of 10 minutes and having an interval break of 30 s. Extraction of the reaction mixture by elution with ethanol (5 ml) followed by solvent evaporation to furnished the crude product (2a-l). The products were purified by recrystallization in ethanol. This methodology was applicable for all the reactions listed in (Table 2). The remaining catalyst was washed with ethanol (2 ml) followed by acetone (2 ml)s, dried up under vacuum and reused for next run.

S4. Analytical dada for selected products

7-(3,4-dimethoxyphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2a):

^{1}H NMR (500 MHz, DMSO-d_6) δ: 8.20 (d, *J* = 7.6 Hz, 1H), 8.10 (d, *J* = 7.8 Hz, 1H), 8.00 (t, *J* = 7.6 Hz, 1H), 7.80 (t, *J* = 7.7 Hz, 1H), 7.25 (s, 1H), 7.10 (s, 1H), 6.85 (s, 1H), 6.65 (d, *J* = 8.1 Hz, 1H), 6.80 (d, *J* = 8.4 Hz,

1H), 6.15 (s, 1H), 6.10 (s, 1H), 5.15 (s, 1H), 3.72 (s, 3H), 3.64 (s, 3H); ^{13}C NMR (125 MHz, DMSO-d_6) δ: 177.9, 175.6, 160.0, 155.0, 146.5, 147.5, 146.7, 142.9, 140.6, 137.8, 135.0, 131.3, 130.2, 128.4, 124.3, 119.4, 115.0, 113.4, 111.0, 110.8, 106.8, 99.8, 98.5, 53.5, 53.5, 36.1; HRMS (ESI) Calcd. for $C_{26}H_{19}O_7$ ([M+H]$^+$): 443.1126. Found: 443.1133.

7-(4-methoxyphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2b):

^{1}H NMR (500 MHz, DMSO-d_6) δ: 8.11 (d, *J* = 7.6 Hz, 1H), 7.99 (dd, *J* = 7.5, 1.0 Hz, 1H), 7.88 (td, *J* = 7.6, 1.2 Hz, 1H), 7.69 (td, *J* = 7.5, 1.0 Hz, 1H), 7.29 – 7.22 (m, 2H), 7.16 (s, 1H), 6.87 – 6.76 (m, 3H), 6.06 (d, *J* = 0.9 Hz, 1H), 6.00 (d, *J* = 0.8 Hz, 1H), 5.04 (s, 1H), 3.69 (s, 3H); ^{13}C NMR (125 MHz, DMSO-d_6) δ: 176.8, 176.6, 156.9, 155.9, 145.7, 143.9, 141.7, 136.3, 134.0, 130.3, 129.2, 129.2, 127.6, 127.4, 123.3, 116.0, 113.4, 112.8, 106.8, 100.7, 97.5, 54.0, 35.7; HRMS (ESI) Calcd. for $C_{25}H_{17}O_6$ ([M+H]$^+$): 413.1021. Found: 413.1001.

7-(2-methoxyphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2c):

^{1}H NMR (500 MHz, DMSO-d_6) δ 8.15 (d, *J* = 7.3 Hz, 1H), 7.99 (dd, *J* = 7.6, 1.1 Hz, 1H), 7.90 (td, *J* = 7.7, 1.3 Hz, 1H), 7.70 (td, *J* = 7.6, 1.0 Hz, 1H), 7.19 – 7.12 (m, 2H), 7.08 (s, 1H), 6.96 (d, *J* = 7.8 Hz, 1H), 6.80 (td, *J* = 7.5, 0.8 Hz, 1H), 6.72 (s, 1H), 6.03 (d, *J* = 0.8 Hz, 1H), 5.96 (d, *J* = 0.8 Hz, 1H), 5.37 (s, 1H), 3.81 (s, 3H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 177.7, 177.6, 157.8, 156.1, 146.6, 144.7, 142.8, 135.1, 133.0, 131.3, 130.3, 130.2, 128.7, 128.4, 128.0, 124.2, 120.6, 116.6, 113.4, 111.7, 107.0, 101.7, 98.4, 55.7, 32.0; HRMS (ESI) Calcd. for $C_{25}H_{17}O_6$ ([M+H]$^+$): 413.1022. Found: 413.1003.

7-(3-methoxyphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2d):

^{1}H NMR (500 MHz, DMSO-d6) δ: 8.15 (d, *J* = 7.3 Hz, 1H), 8.00 (dd, *J* = 7.5, 1.0 Hz, 1H), 7.90 (td, *J* = 7.6, 1.3 Hz, 1H), 7.70 (td, *J* = 7.5, 1.1 Hz, 1H), 7.17 (dd, *J* = 13.0, 4.9 Hz, 2H), 6.90 – 6.88 (m, 1H), 6.86 (s, 1H), 6.82 (d, *J* = 7.7 Hz, 1H), 6.73 (dd, *J* = 8.1, 2.0 Hz, 1H), 6.07 (d, *J* = 0.8 Hz, 1H), 6.00 (d, *J* = 0.9 Hz, 1H), 5.04 (s, 1H), 3.70 (s, 3H); ^{13}C NMR (125 MHz, DMSO-d6) δ: 176.8, 176.5, 158.2, 156.2, 145.8, 145.5, 143.9, 141.7, 133.9, 130.3, 129.2, 129.2, 128.5, 178.3, 123.3, 118.6, 115.5, 113.0, 112.8, 110.4, 106.7, 100.8, 97.5, 53.9, 36.5; HRMS (ESI) Calcd. for $C_{25}H_{17}O_6$ ([M+H]+): 413.1022. Found: 413.1029.

7-(3,4-dimethylphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2e):

^{1}H NMR (500 MHz, DMSO-d_6) δ 8.14 (d, *J* = 7.8 Hz, 1H), 7.98 (dd, *J* = 7.6, 0.9 Hz, 1H), 7.88 (td, *J* = 7.7, 1.2 Hz, 1H), 7.69 (td, *J* = 7.6, 1.0 Hz, 1H), 7.11 (s, 1H), 7.06 (s, 1H), 7.02 – 6.97 (m, 2H), 6.79 (s, 1H), 6.04 (d, *J*

= 0.8 Hz, 1H), 5.98 (d, *J* = 0.8 Hz, 1H), 4.99 (s, 1H), 2.13 (s, 3H), 2.11 (s, 3H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 177.8, 177.6, 157.0, 146.7, 144.9, 142.6, 142.5, 136.1, 135.0, 134.4, 131.3, 130.3, 130.2, 129.5, 128.5, 128.3, 124.9, 124.3, 116.9, 114.3, 107.8, 101.7, 98.5, 37.2, 19.4, 18.8; HRMS (ESI) Calcd. for $C_{26}H_{19}O_5$ ([M+H]$^+$): 411.1229. Found: 411.1241.

7-(p-tolyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2f):

^{1}H NMR (500 MHz, DMSO-d_6) δ 8.13 (d, *J* = 7.8 Hz, 1H), 7.98 (dd, *J* = 7.6, 1.0 Hz, 1H), 7.88 (td, *J* = 7.7, 1.3 Hz, 1H), 7.69 (td, *J* = 7.6, 1.1 Hz, 1H), 7.18 (d, *J* = 8.1 Hz, 2H), 7.11 (s, 1H), 7.04 (d, *J* = 8.0 Hz, 2H), 6.79 (s, 1H), 6.04 (d, *J* = 0.9 Hz, 1H), 5.98 (d, *J* = 0.9 Hz, 1H), 5.03 (s, 1H), 2.20 (s, 3H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 177.7, 177.5, 157.0, 146.7, 144.9, 142.6, 142.2, 135.6, 135.0, 131.3, 130.2, 130.1, 128.9, 128.3, 127.4, 124.3, 116.8, 114.2, 107.7, 101.7, 98.5, 37.2, 20.4; HRMS (ESI) Calcd. for $C_{25}H_{17}O_5$ ([M+H]$^+$): 397.1072. Found: 397.1090.

7-(4-chlorophenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2g):

^{1}H NMR (500 MHz, DMSO-d6) δ: 8.17 (d, *J* = 7.5 Hz, 1H), 8.03 (dd, *J* = 7.5, 1.0 Hz, 1H), 7.90 (td, *J* = 7.6, 1.2 Hz, 1H), 7.74 (td, *J* = 7.7, 1.0 Hz, 1H), 7.35 – 7.27 (m, 4H), 7.15 (s, 1H), 6.86 (s, 1H), 6.09 (d, *J* = 0.7 Hz, 1H), 6.10 (d, *J* = 0.7 Hz, 1H), 5.15 (s, 1H); ^{13}C NMR (125 MHz, DMSO-d6) δ: 176.7, 176.4, 156.2, 146.0, 144.0, 142.9, 141.7, 133.9, 130.4, 130.1, 129.3, 129.1, 128.5, 127.3, 123.3, 115.1, 112.7, 106.7, 100.8, 97.6, 35.9; HRMS (ESI) Calcd. for $C_{24}H_{14}ClO_5$ ([M+H]+): 417.0524. Found: 417.0526.

7-(4-bromophenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2h):

^{1}H NMR (500 MHz, DMSO-d_6) δ 8.14 (d, *J* = 7.8 Hz, 1H), 7.99 (dd, *J* = 7.6, 1.0 Hz, 1H), 7.88 (td, *J* = 7.7, 1.3 Hz, 1H), 7.70 (td, *J* = 7.6, 1.1 Hz, 1H), 7.46 – 7.42 (m, 2H), 7.31 – 7.26 (m, 2H), 7.14 (s, 1H), 6.83 (s, 1H), 6.06 (d, *J* = 0.9 Hz, 1H), 6.00 (d, *J* = 0.9 Hz, 1H), 5.10 (s, 1H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 177.7, 177.4, 157.1, 147.0, 145.0, 144.3, 142.6, 134.9, 131.4, 131.2, 130.3, 130.1, 129.9, 128.3, 124.3, 119.6, 116.0, 113.6, 107.7, 101.8, 98.6, 37.0; HRMS (ESI) Calcd. for $C_{24}H_{14}BrO_5$ ([M+H]$^+$): 461.0019. Found: 461.0034.

7-(4-nitrophenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2i):

^{1}H NMR (500 MHz, DMSO-d_6) δ 8.16 (d, *J* = 7.8 Hz, 1H), 8.13 – 8.10 (m, 2H), 8.00 (dd, *J* = 7.6, 1.0 Hz, 1H), 7.89 (td, *J* = 7.7, 1.3 Hz, 1H), 7.71 (td, *J* = 7.6, 1.1 Hz, 1H), 7.65 – 7.61 (m, 2H), 7.16 (s, 1H), 6.84 (s, 1H), 6.06 (d, *J* = 0.8 Hz, 1H), 6.00 (d, *J* = 0.8 Hz, 1H), 5.28 (s, 1H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 177.6,

177.3, 157.3, 152.2, 147.2, 146.1, 145.1, 142.7, 134.9, 131.5, 130.4, 130.0, 129.1, 128.3, 124.4, 123.6, 115.0, 112.9, 107.7, 101.9, 98.7, 37.4; HRMS (ESI) Calcd. for $C_{24}H_{14}NO_7$ ($[M+H]^+$): 428.0765. Found: 428.0777.

7-(3-nitrophenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2j):

^{1}H NMR (500 MHz, DMSO-d_6) δ 8.20 (t, *J* = 1.9 Hz, 1H), 8.16 (d, *J* = 7.7 Hz, 1H), 8.05 – 7.98 (m, 2H), 7.89 (td, *J* = 7.7, 1.3 Hz, 1H), 7.79 (d, *J* = 7.9 Hz, 1H), 7.71 (td, *J* = 7.6, 1.0 Hz, 1H), 7.56 (t, *J* = 8.0 Hz, 1H), 7.18 (s, 1H), 6.88 (s, 1H), 6.06 (d, *J* = 0.8 Hz, 1H), 6.00 (d, *J* = 0.8 Hz, 1H), 5.32 (s, 1H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 177.7, 177.3, 157.3, 147.8, 147.3, 147.0, 145.2, 142.8, 134.9, 134.7, 131.5, 130.6, 130.1, 129.9, 128.3, 124.4, 122.6, 121.7, 115.4, 113.1, 107.8, 102.0, 98.8, 37.3; HRMS (ESI) Calcd. for $C_{24}H_{14}NO_7$ ($[M+H]^+$): 428.0765. Found: 428.0763.

7-(thiophen-2-yl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2k):

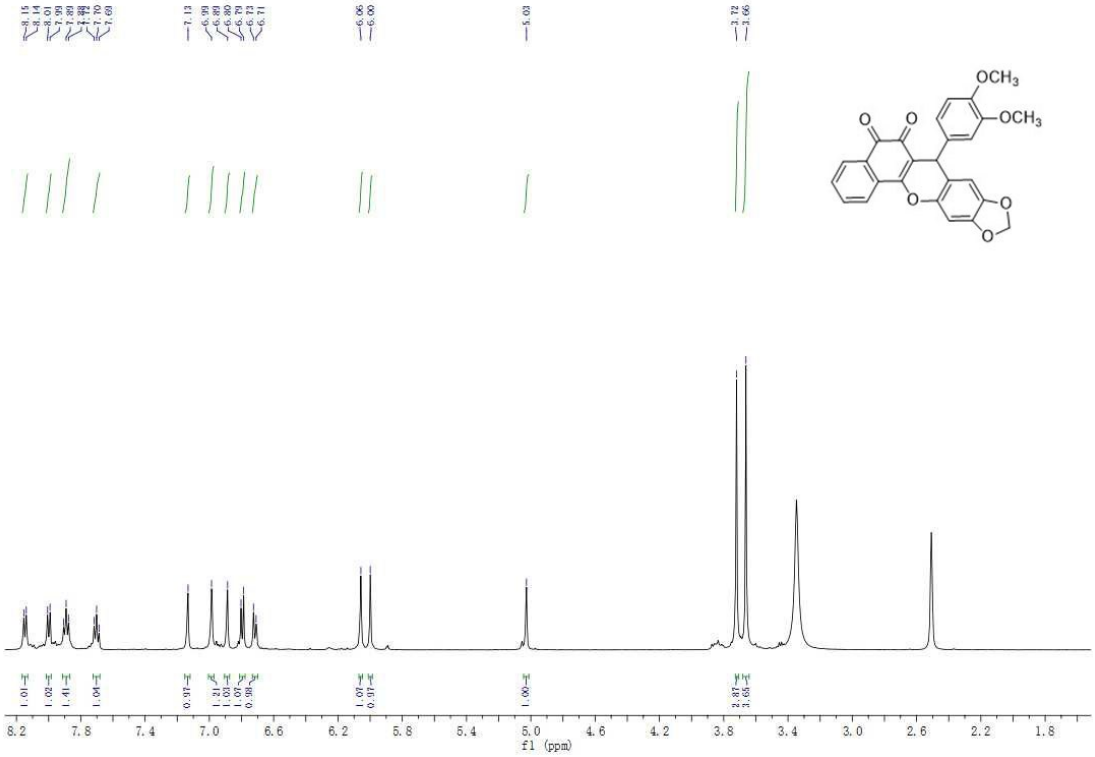
^{1}H NMR (500 MHz, DMSO-d6) δ: 8.17 (d, *J* = 7.6 Hz, 1H), 8.03 (dd, *J* = 7.7, 1.0 Hz, 1H), 7.90 (td, *J* = 7.8, 1.3 Hz, 1H), 7.70 (td, *J* = 7.7, 1.0 Hz, 1H), 7.26 (dd, *J* = 5.1, 1.2 Hz, 1H), 7.18 (s, 1H), 7.03 (s, 1H), 6.99 (d, *J* = 3.2 Hz, 1H), 6.89 (dd, *J* = 5.1, 3.5 Hz, 1H), 6.10 (d, *J* = 0.9 Hz, 1H), 6.05 (d, *J* = 0.9 Hz, 1H), 5.45 (s, 1H); ^{13}C NMR (125 MHz, DMSO-d6) δ: 176.7, 176.4, 156.2, 147.8, 146.2, 144.1, 142.0, 134.1, 130.6, 129.2, 129.0, 127.5, 125.9, 123.8, 123.7, 123.4, 115.2, 113.1, 106.9, 100.9, 97.6, 31.4; HRMS (ESI) Calcd. for $C_{22}H_{13}O_5S$ ([M+H]+): 389.0478. Found: 389.0491.

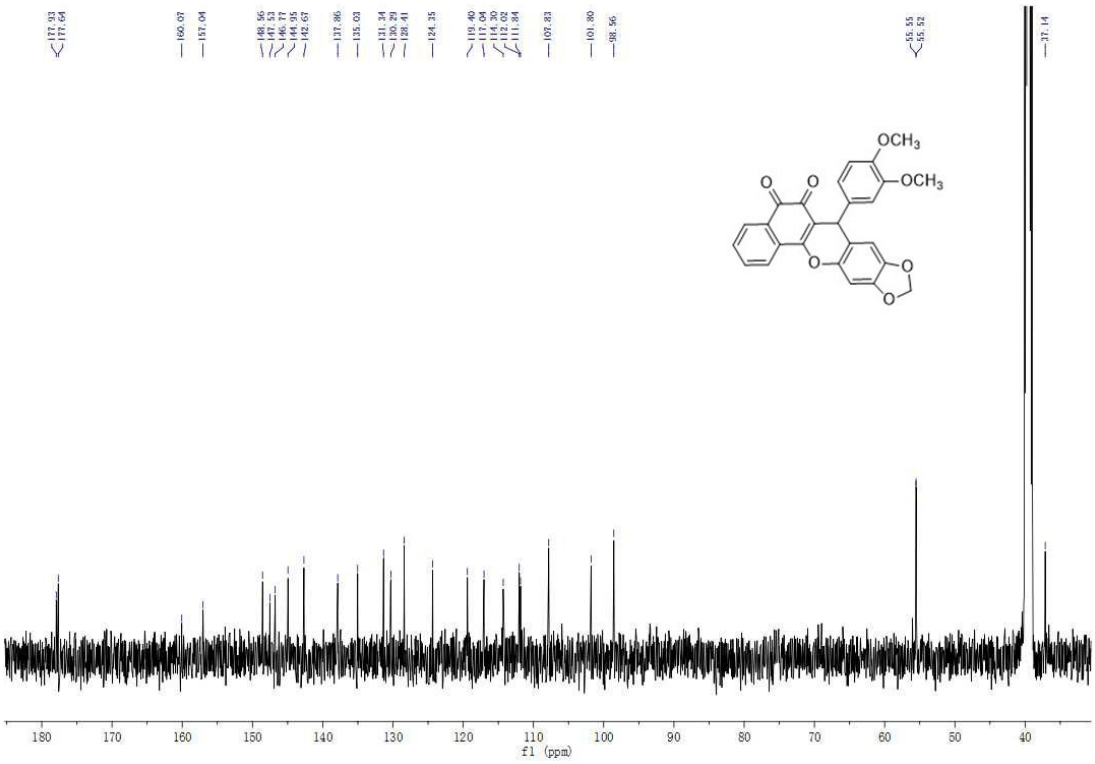
7-phenyl-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2l):

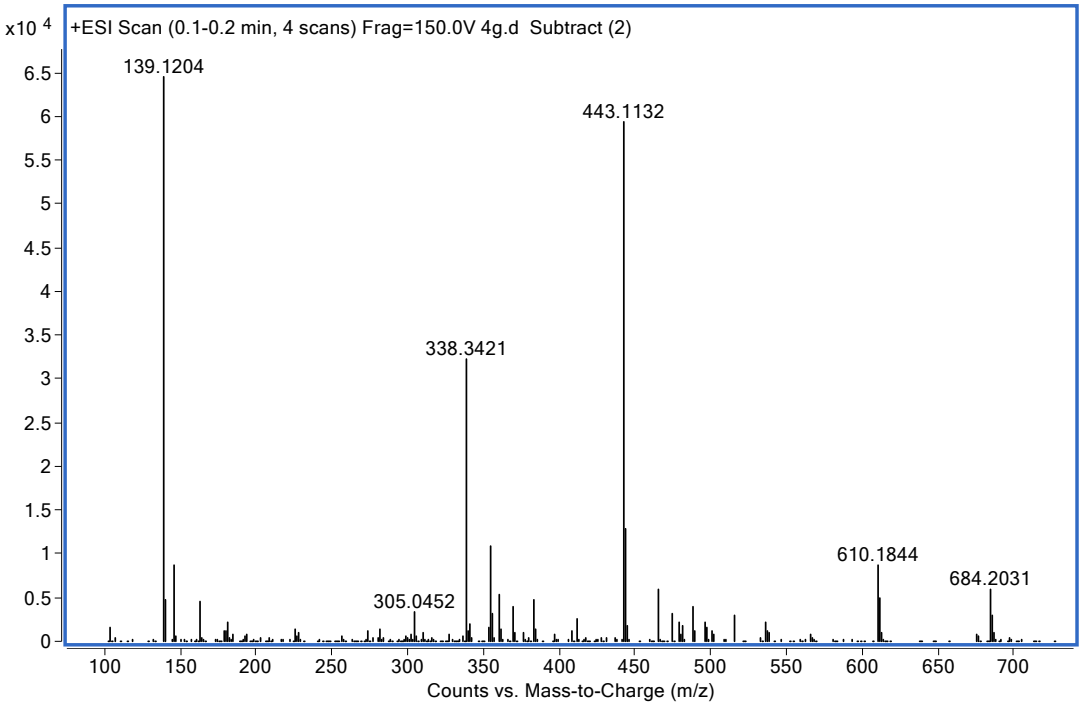
^{1}H NMR (500 MHz, DMSO-d_6) δ 8.16 (d, *J* = 7.3 Hz, 1H), 8.00 (dd, *J* = 7.6, 1.0 Hz, 1H), 7.90 (td, *J* = 7.7, 1.2 Hz, 1H), 7.71 (td, *J* = 7.6, 1.0 Hz, 1H), 7.34 – 7.30 (m, 2H), 7.25 (t, *J* = 7.7 Hz, 2H), 7.17 – 7.13 (m, 2H), 6.85 (s, 1H), 6.06 (d, *J* = 0.8 Hz, 1H), 5.99 (d, *J* = 0.7 Hz, 1H), 5.10 (s, 1H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 178.2, 178.0, 157.6, 147.3, 145.5, 145.4, 143.2, 135.4, 131.8, 130.7, 130.7, 128.9, 128.8, 128.0, 127.0, 124.8, 117.2, 114.6, 108.2, 102.3, 99.0, 38.0; HRMS (ESI) Calcd. for $C_{24}H_{15}O_5$ ($[M+H]^+$): 383.0914. Found: 383.0928.

S5. ^{1}H NMR, ^{13}C NMR, MS spectra of compounds (2a-2l):

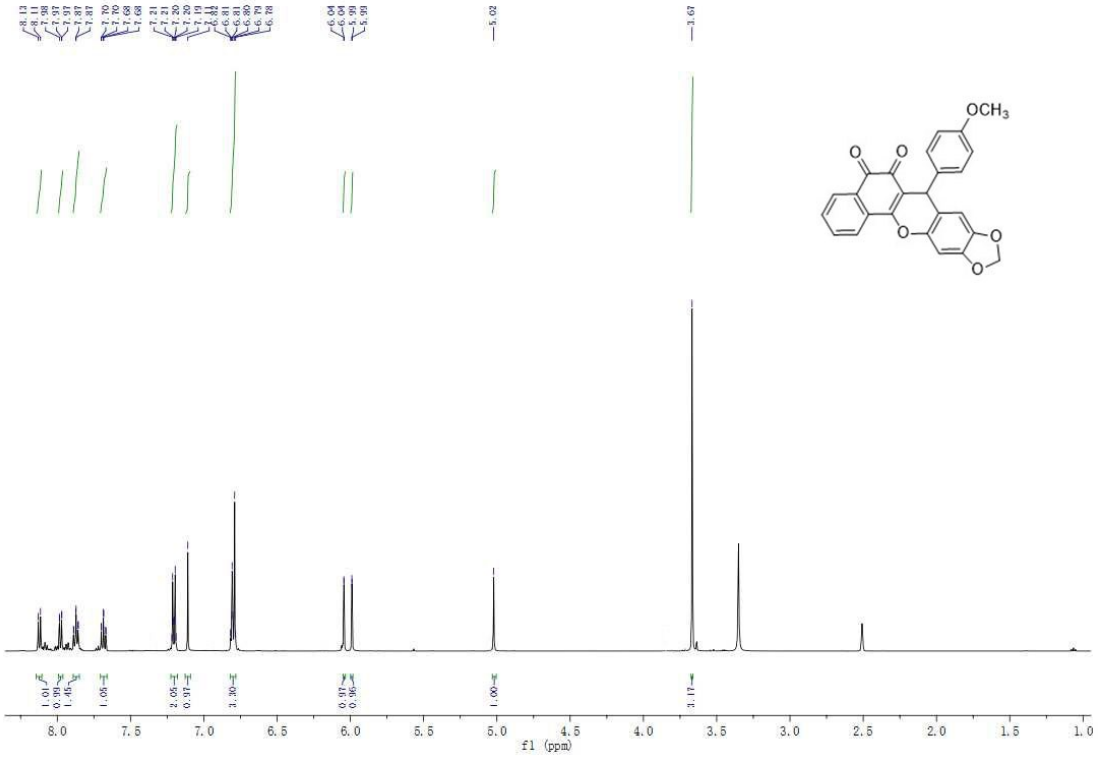
7-(3,4-dimethoxyphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2a):

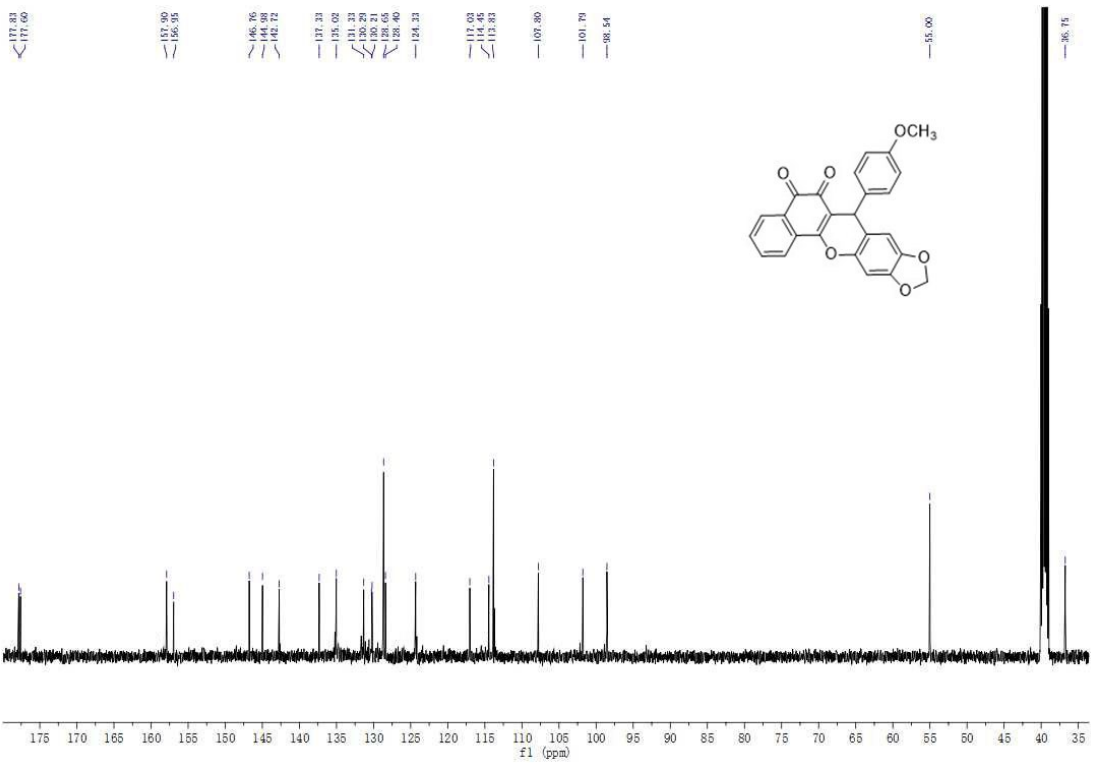


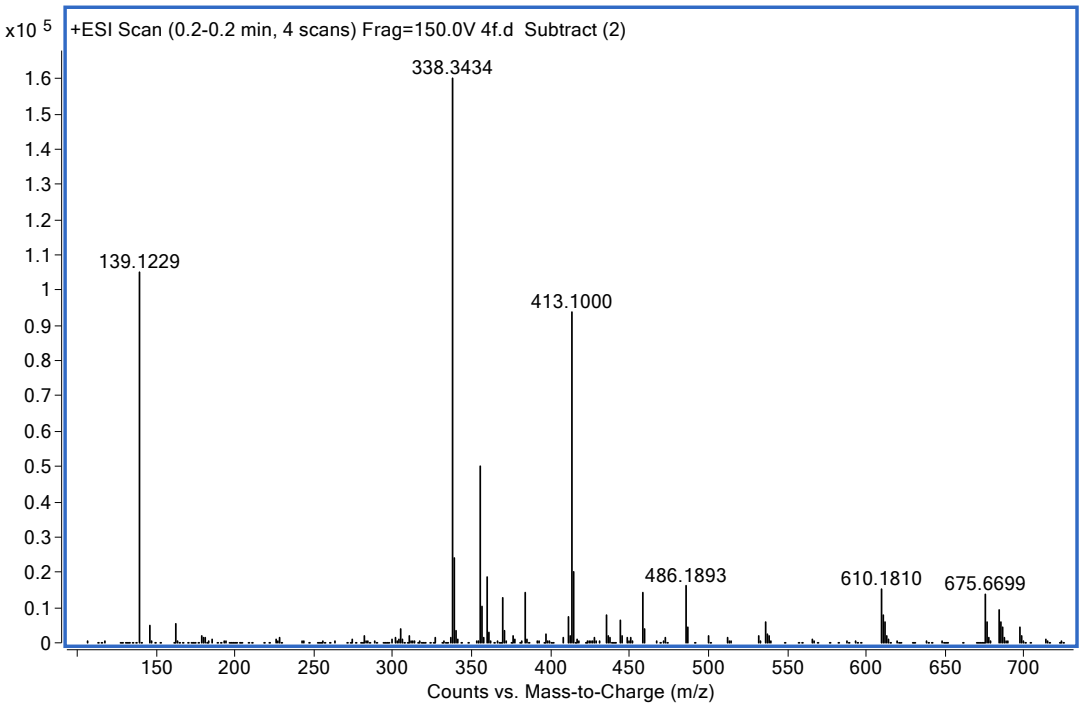




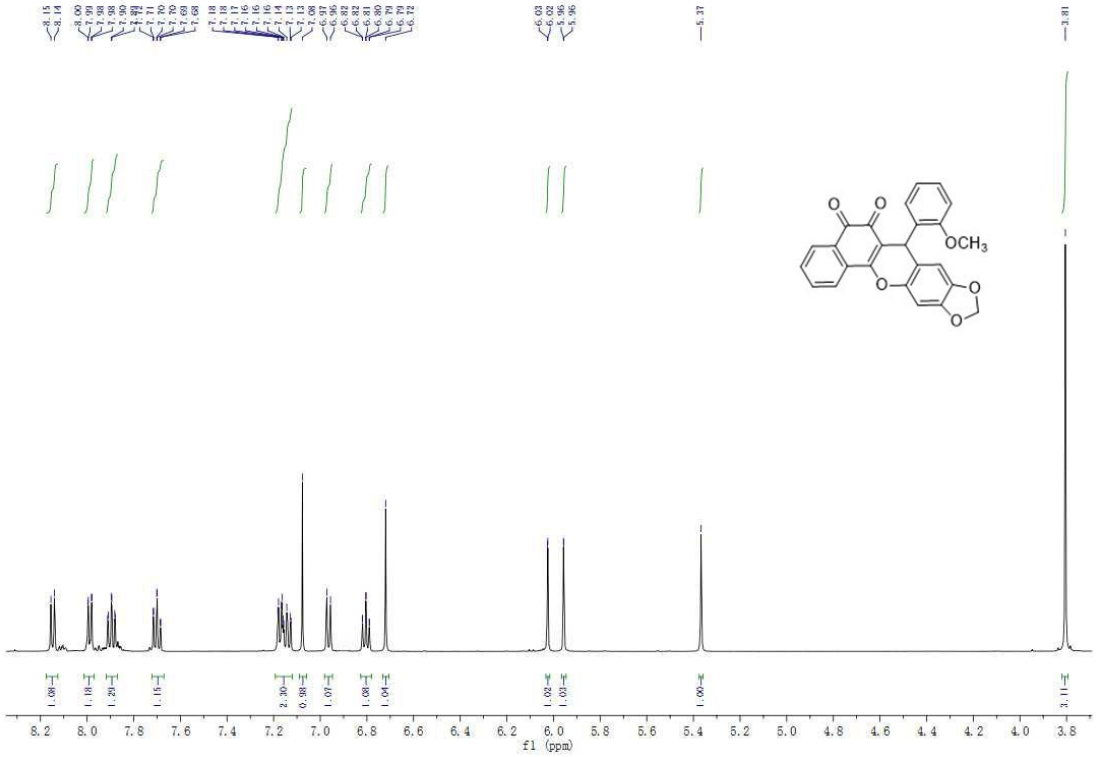
7-(4-methoxyphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2B):

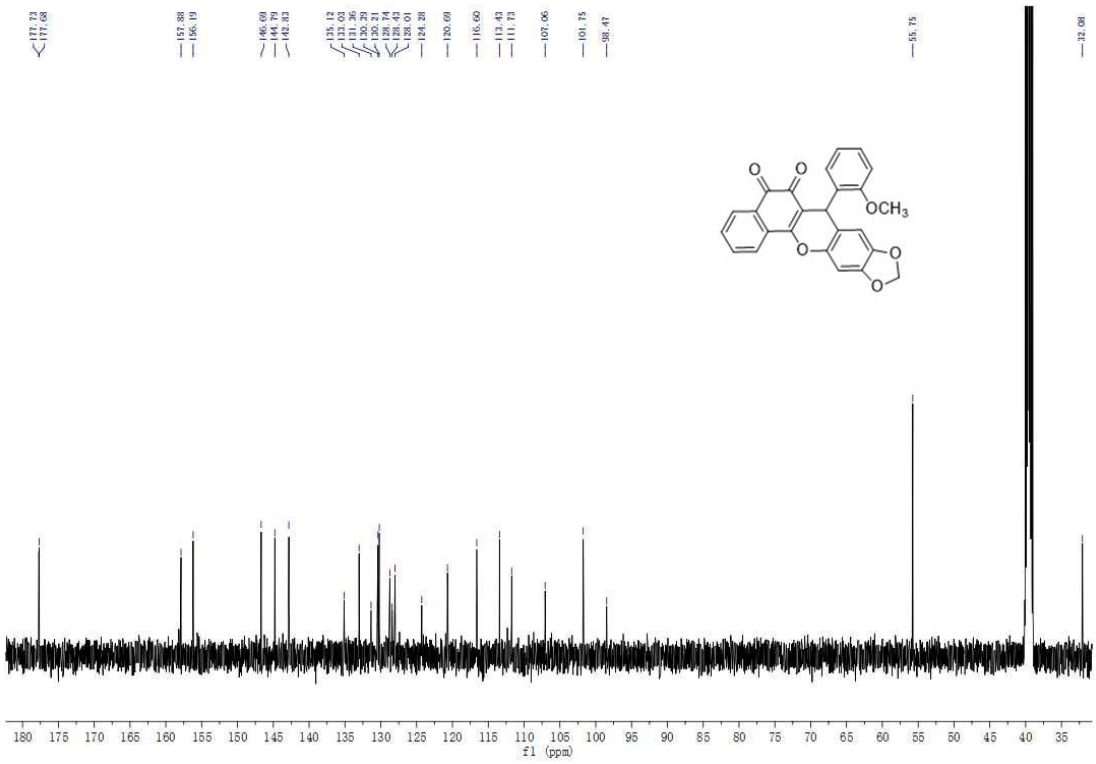


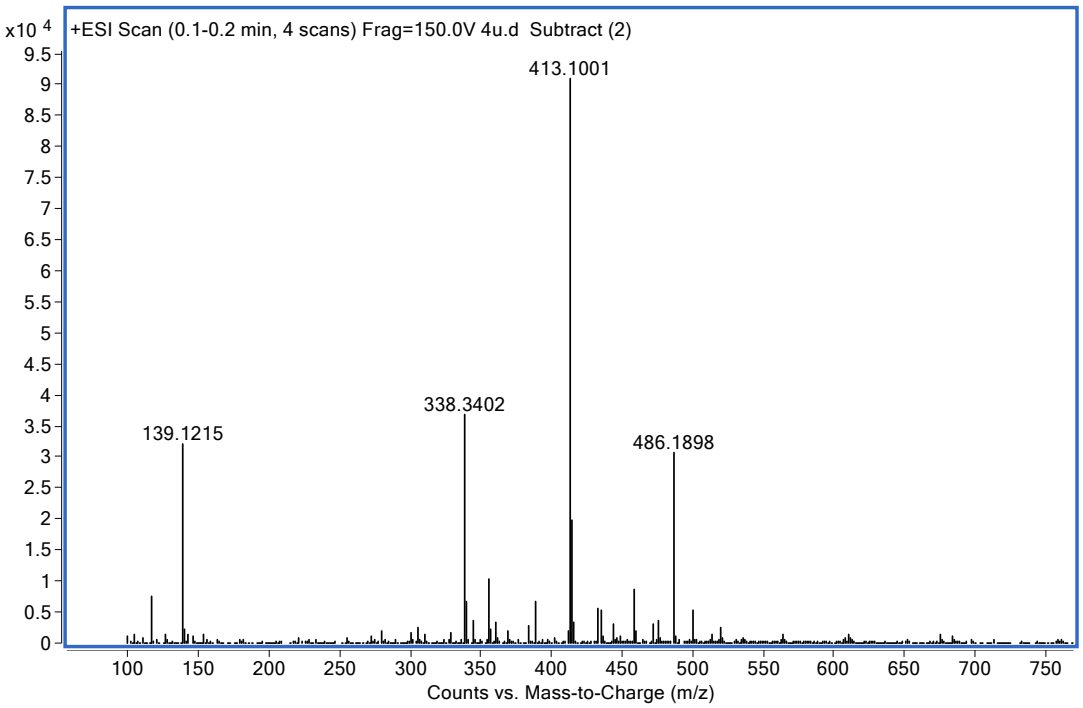

OCH3
O
O
O
O
O
f1 (ppm)


x10 5
+ESI Scan (0.2-0.2 min, 4 scans) Frag=150.0V 4f.d Subtract (2)
338.3434
139.1229
413.1000
486.1893
610.1810
675.6699
Counts vs. Mass-to-Charge (m/z)

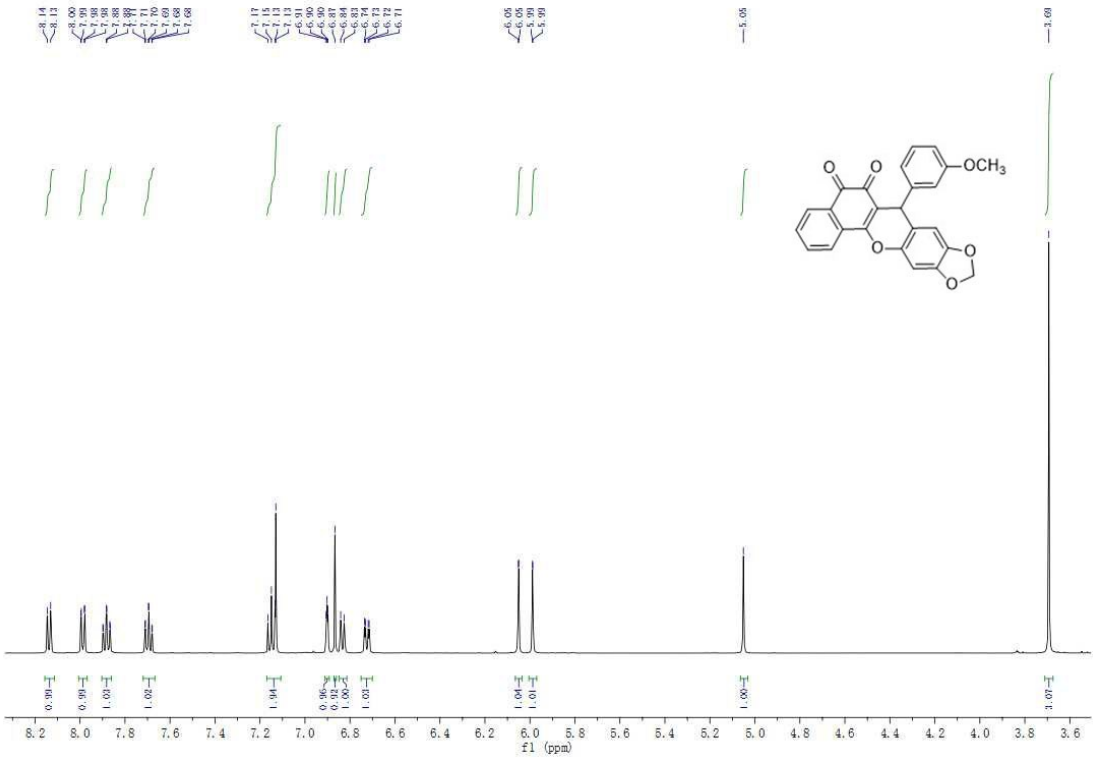
7-(2-methoxyphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2C):

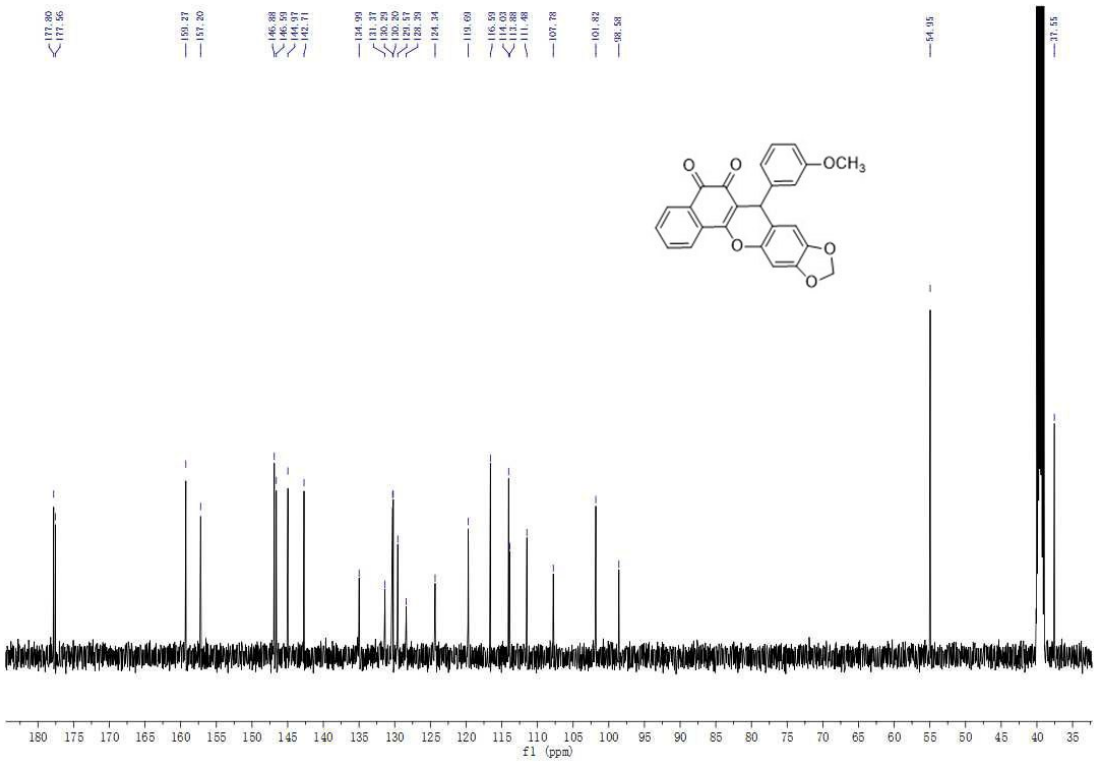


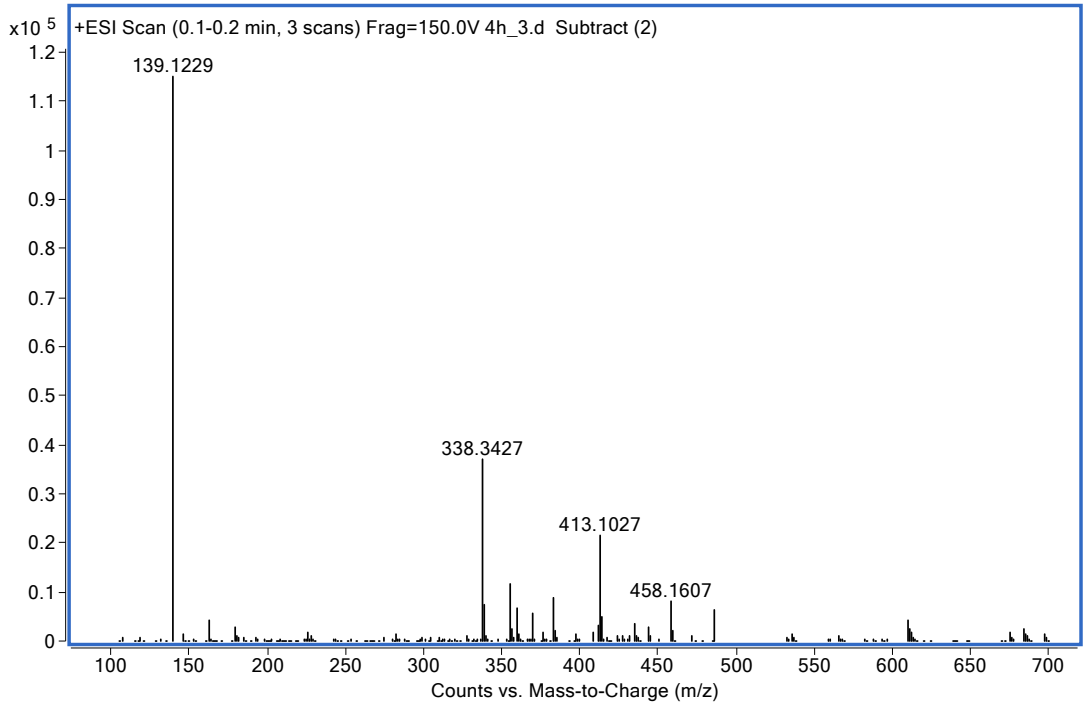




7-(3-methoxyphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2D):




177.80
171.95
159.27
157.20
146.88
146.59
144.97
142.71
134.99
131.37
130.20
129.57
128.39
124.34
119.69
116.59
114.03
113.88
111.48
107.78
101.82
98.58
54.95
37.55
O
O
OCH3
O
O
O
180 175 170 165 160 155 150 145 140 135 130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35
f1 (ppm)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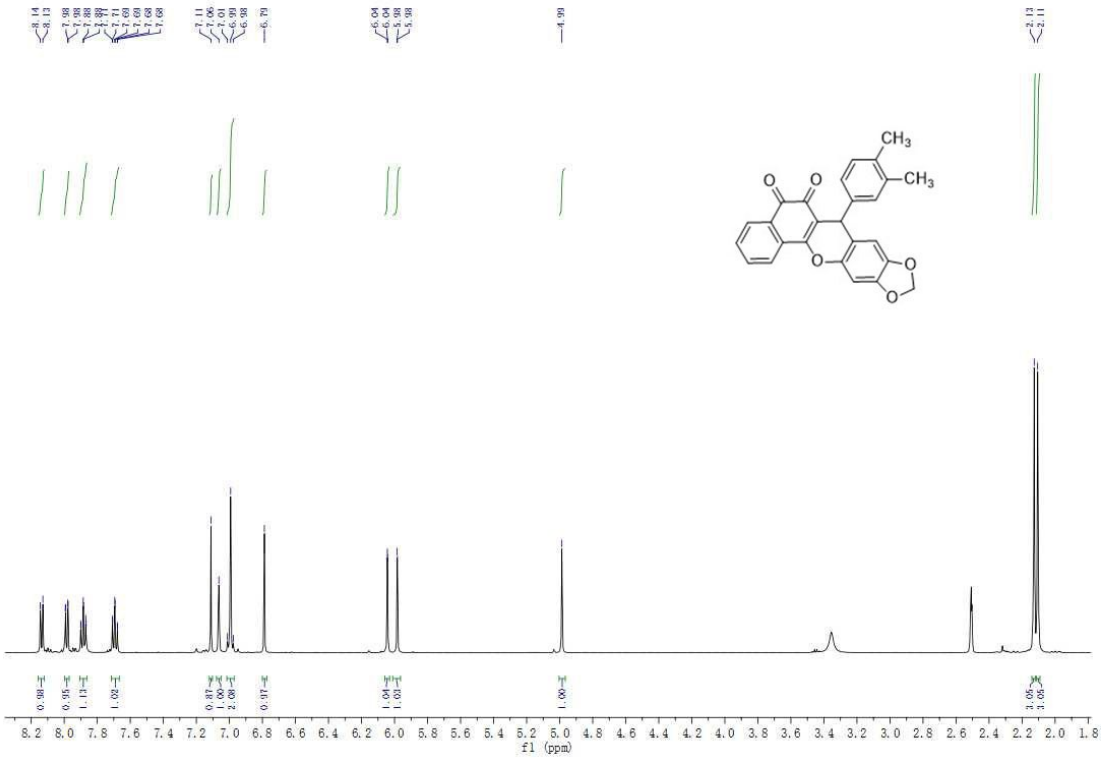
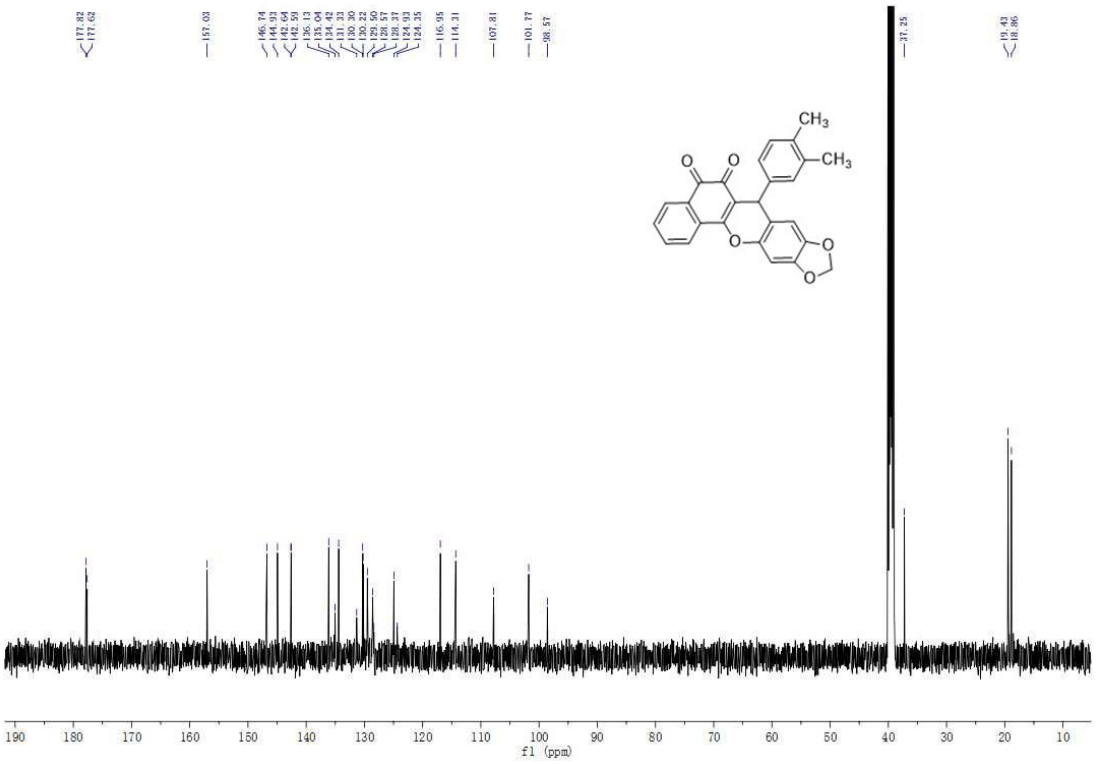
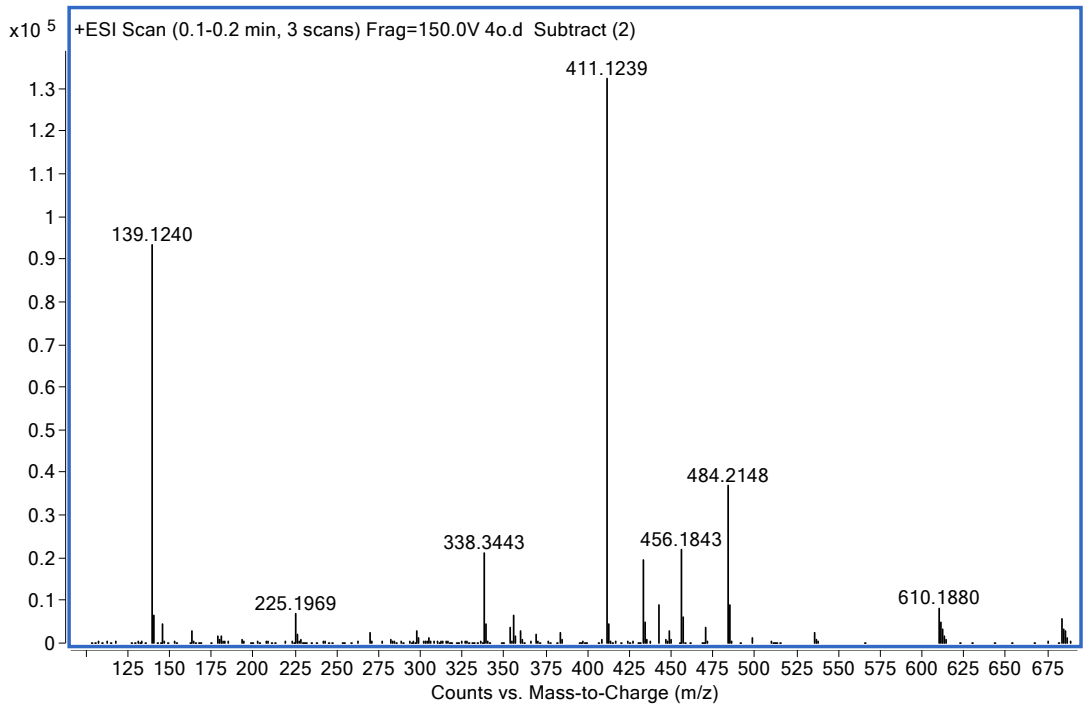
139.1229
338.3427
413.1027
458.1607
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
100 150 200 250 300 350 400 450 500 550 600 650 700
Counts vs. Mass-to-Charge (m/z)

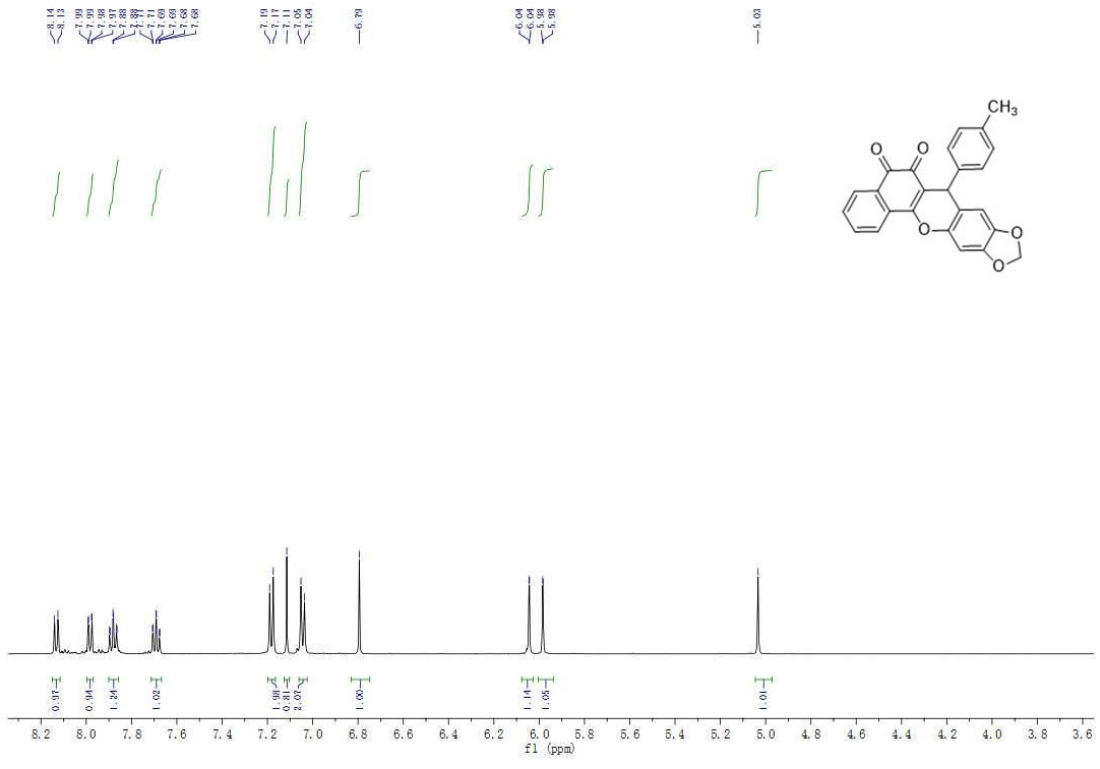
7-(3,4-dimethylphenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2E):

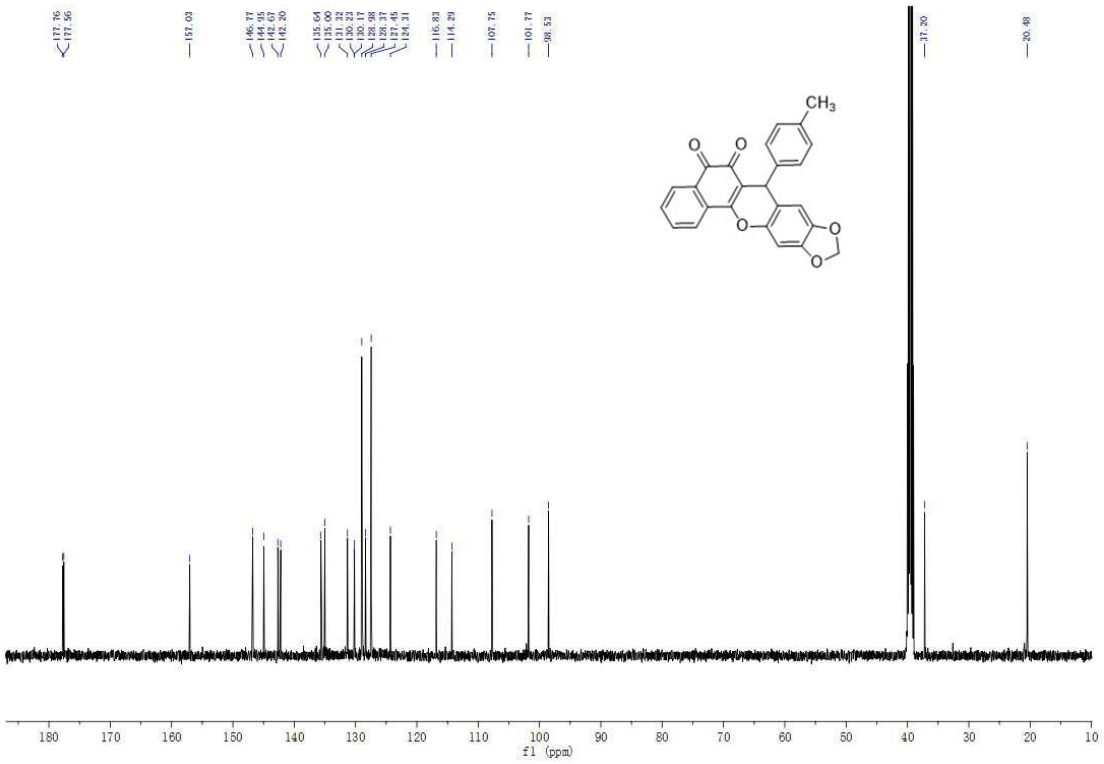


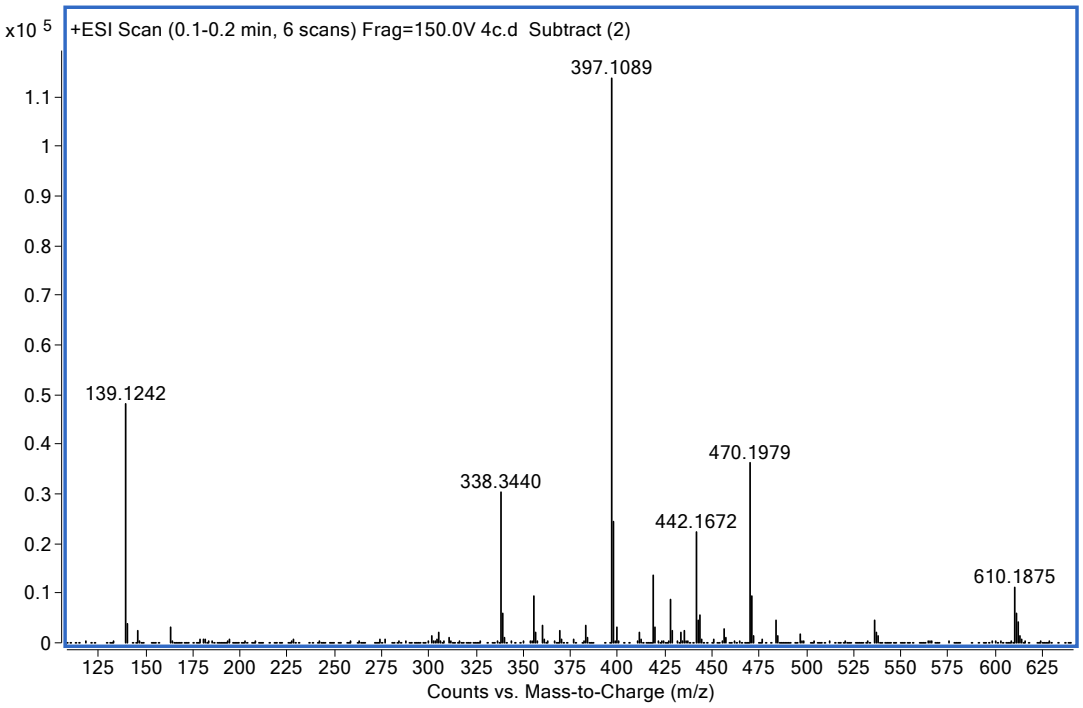




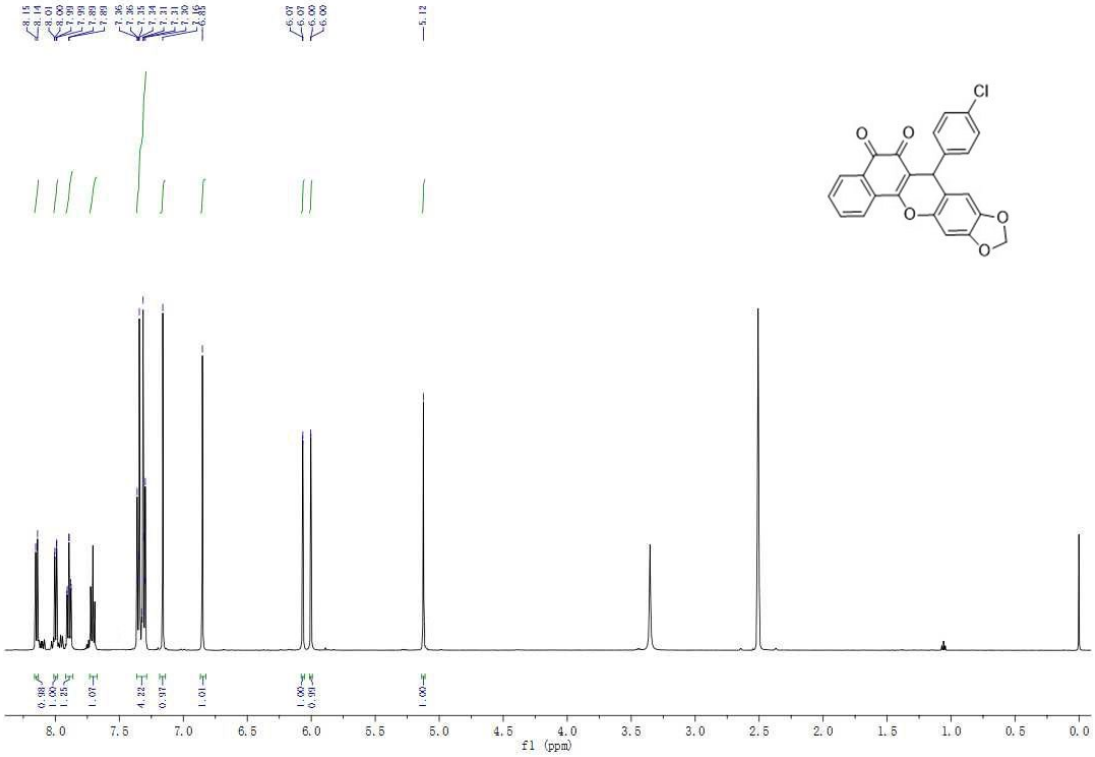
7-(p-tolyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2F):

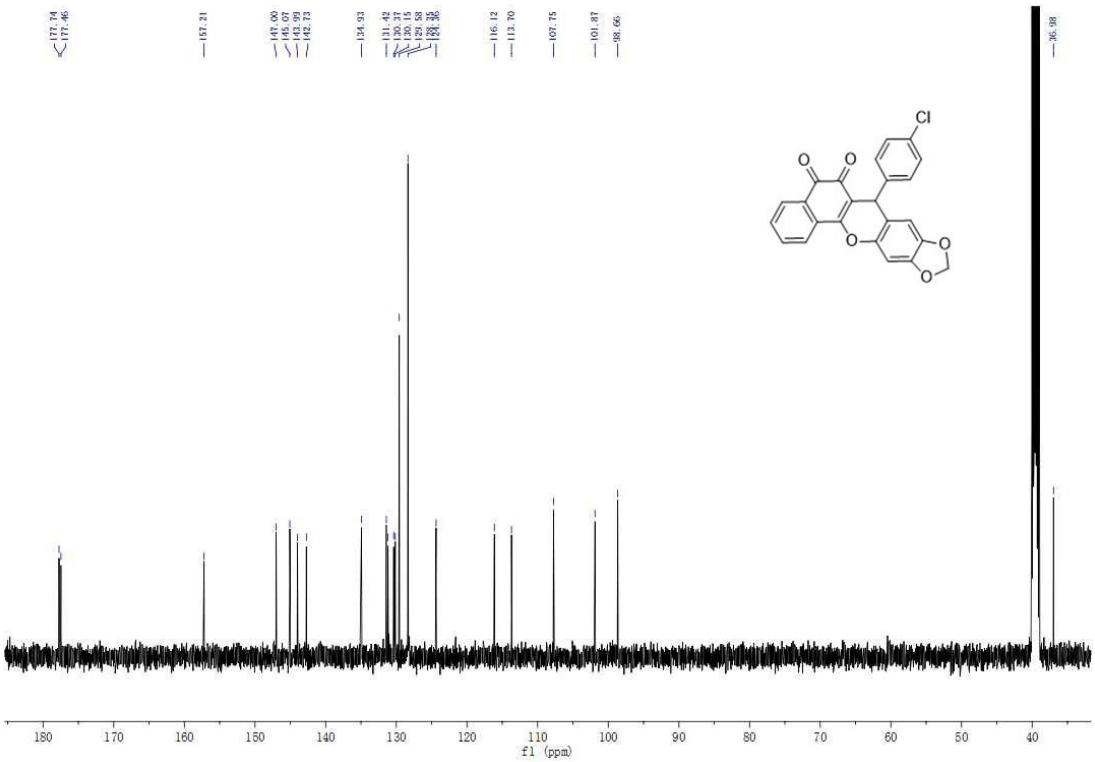


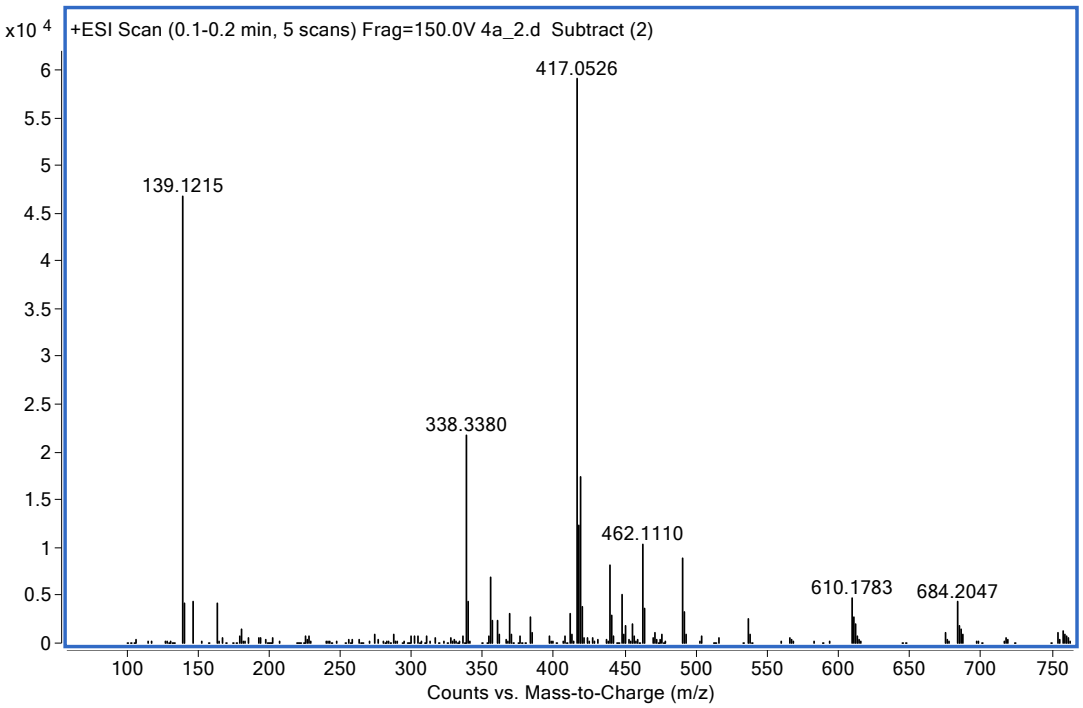

177.76
177.56
157.03
146.77
144.05
142.20
135.64
131.34
130.23
130.17
128.98
128.77
127.46
124.31
116.83
114.29
107.75
101.77
98.53
37.20
20.48
CH3
O
O
O
O
O
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
f1 (ppm)


x10 5
+ESI Scan (0.1-0.2 min, 6 scans) Frag=150.0V 4c.d Subtract (2)
397.1089
139.1242
338.3440
470.1979
442.1672
610.1875
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
125 150 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525 550 575 600 625
Counts vs. Mass-to-Charge (m/z)

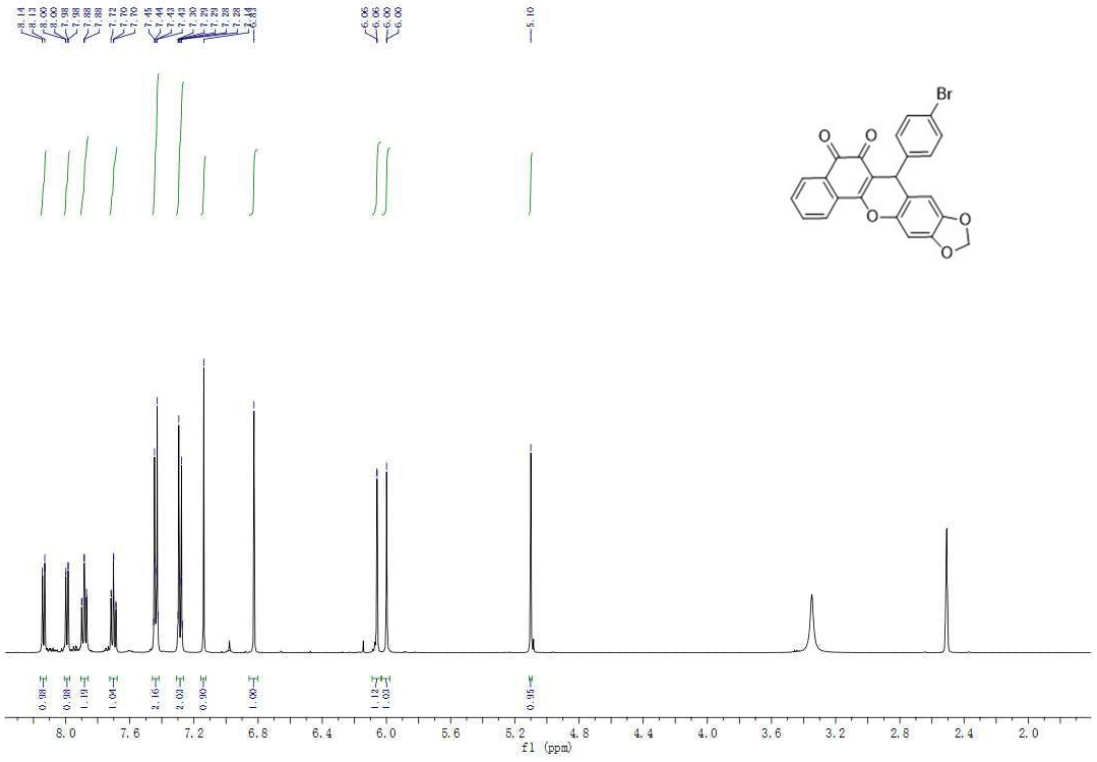
7-(4-chlorophenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2G):

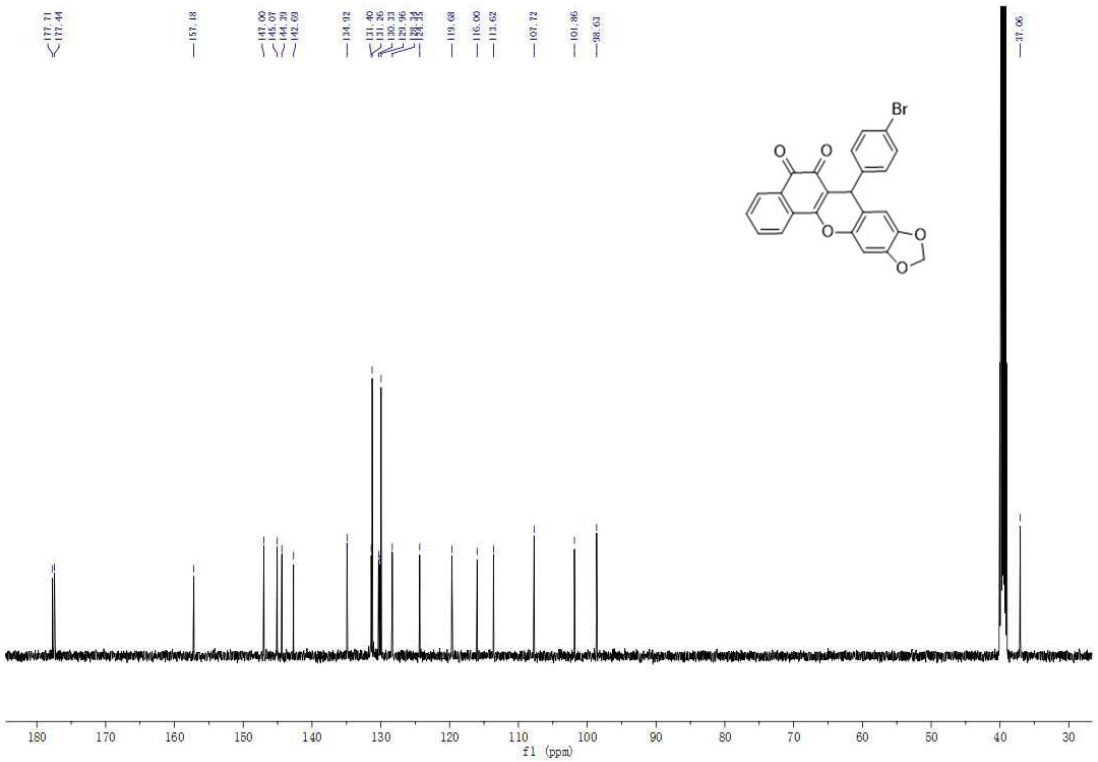


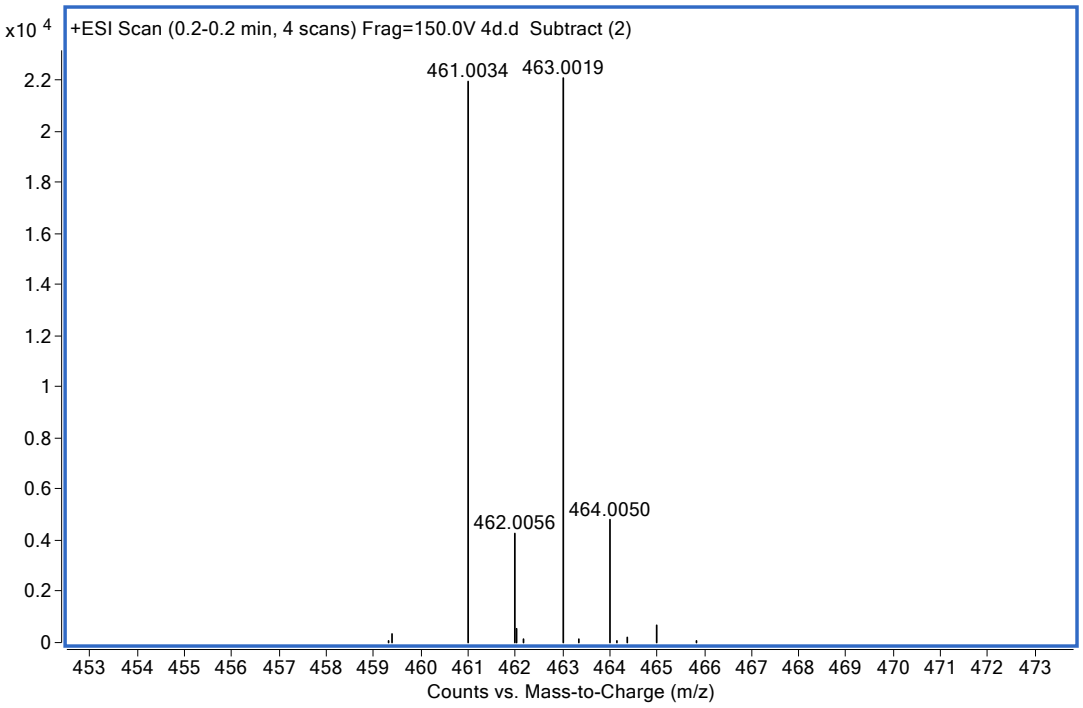




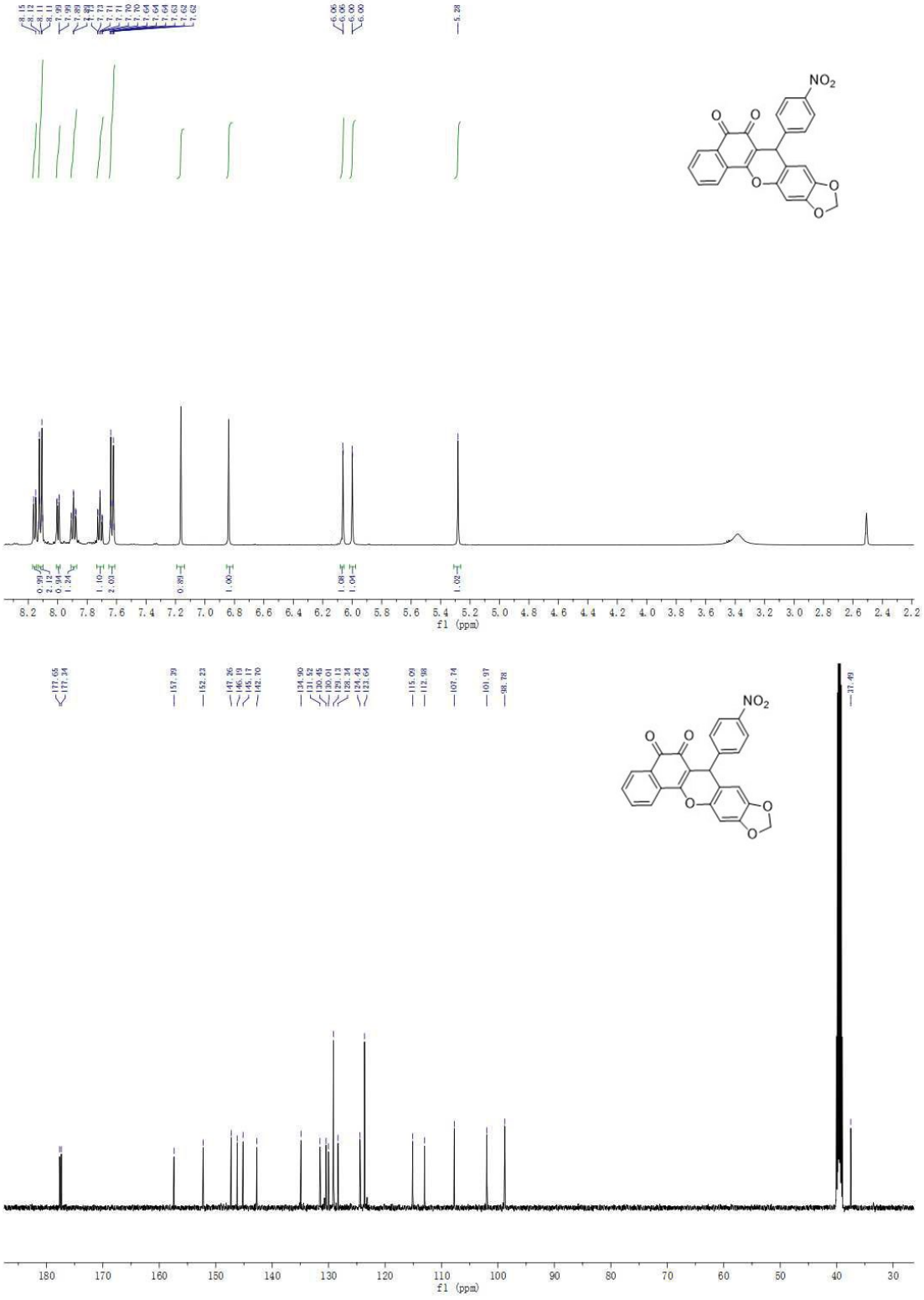
7-(4-bromophenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2H):

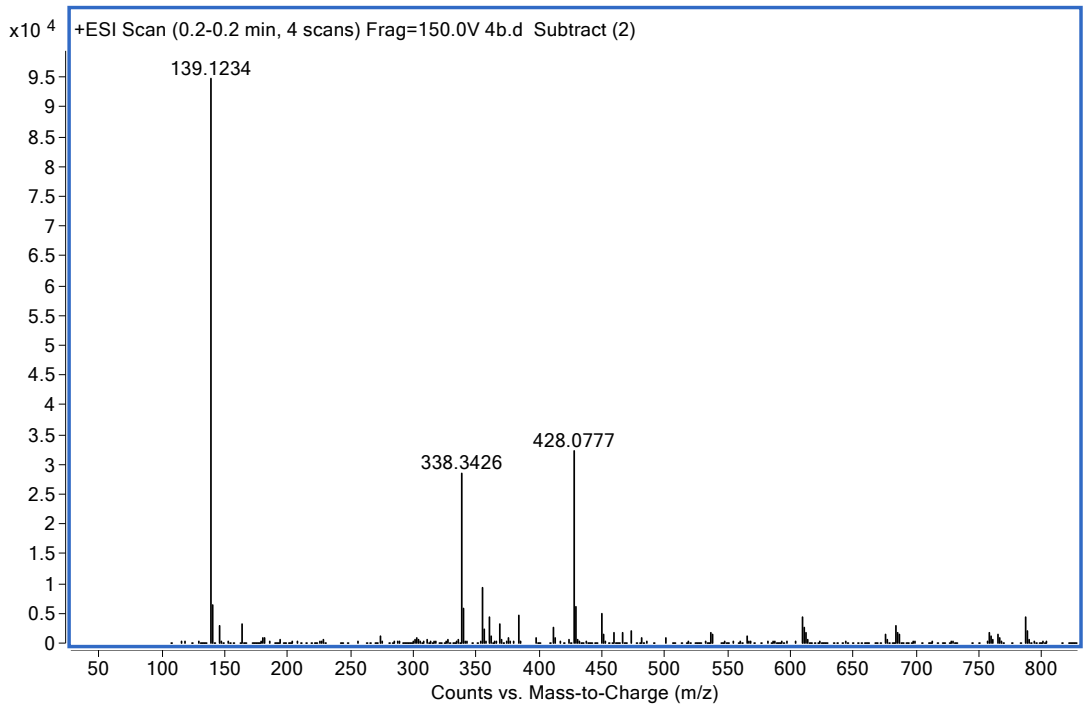



Br
O
O
O
O
f1 (ppm)

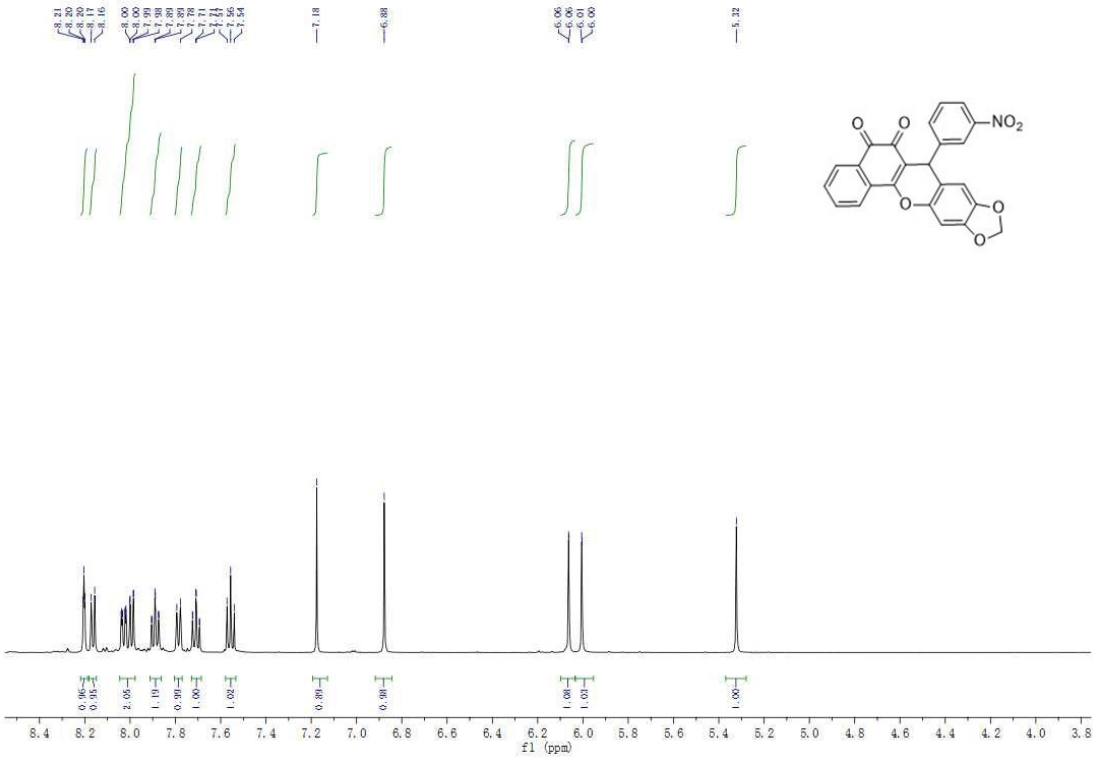

x10 4
+ESI Scan (0.2-0.2 min, 4 scans) Frag=150.0V 4d.d Subtract (2)
461.0034
463.0019
462.0056
464.0050
Counts vs. Mass-to-Charge (m/z)

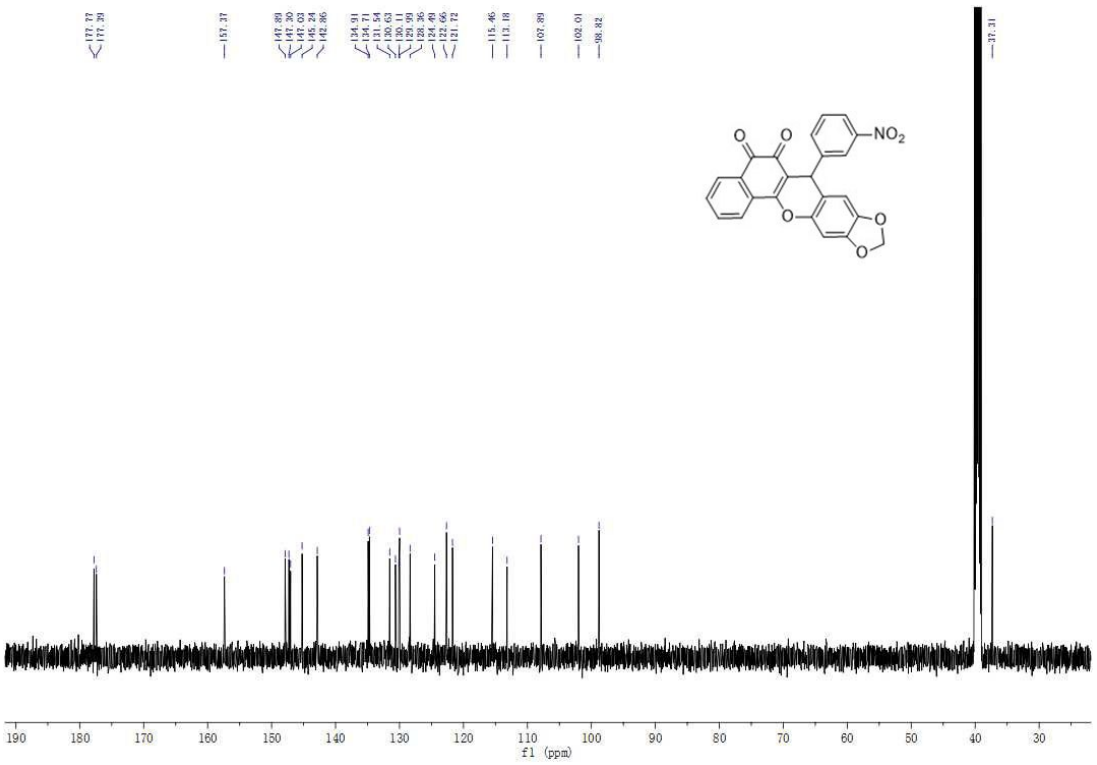
7-(4-nitrophenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2l):

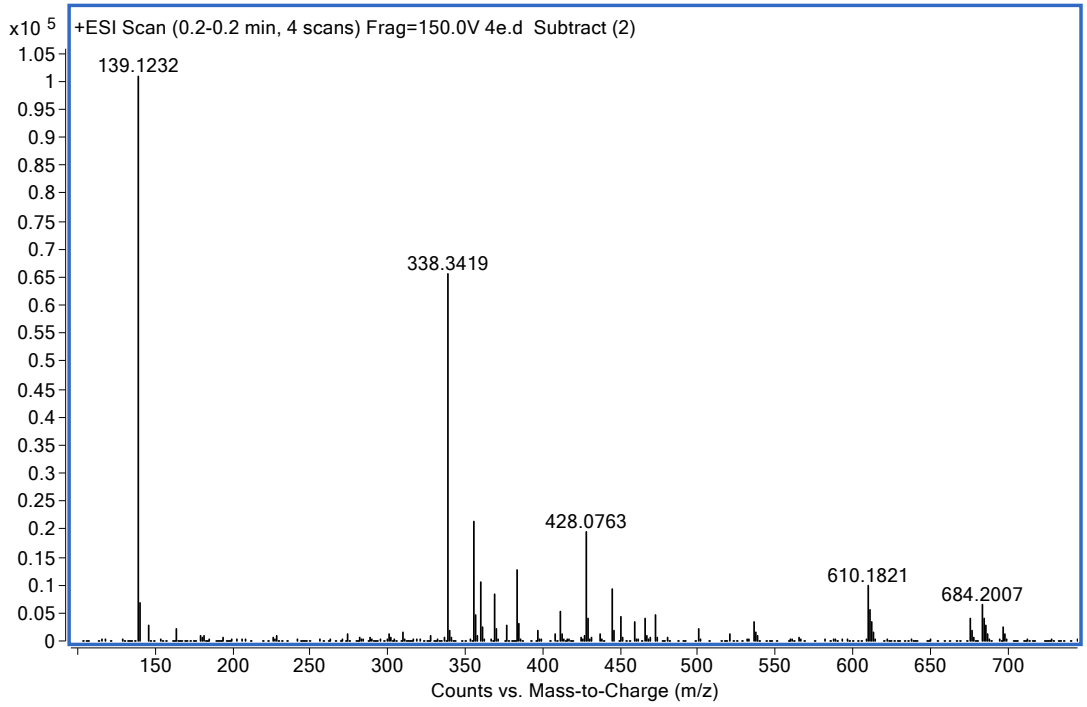




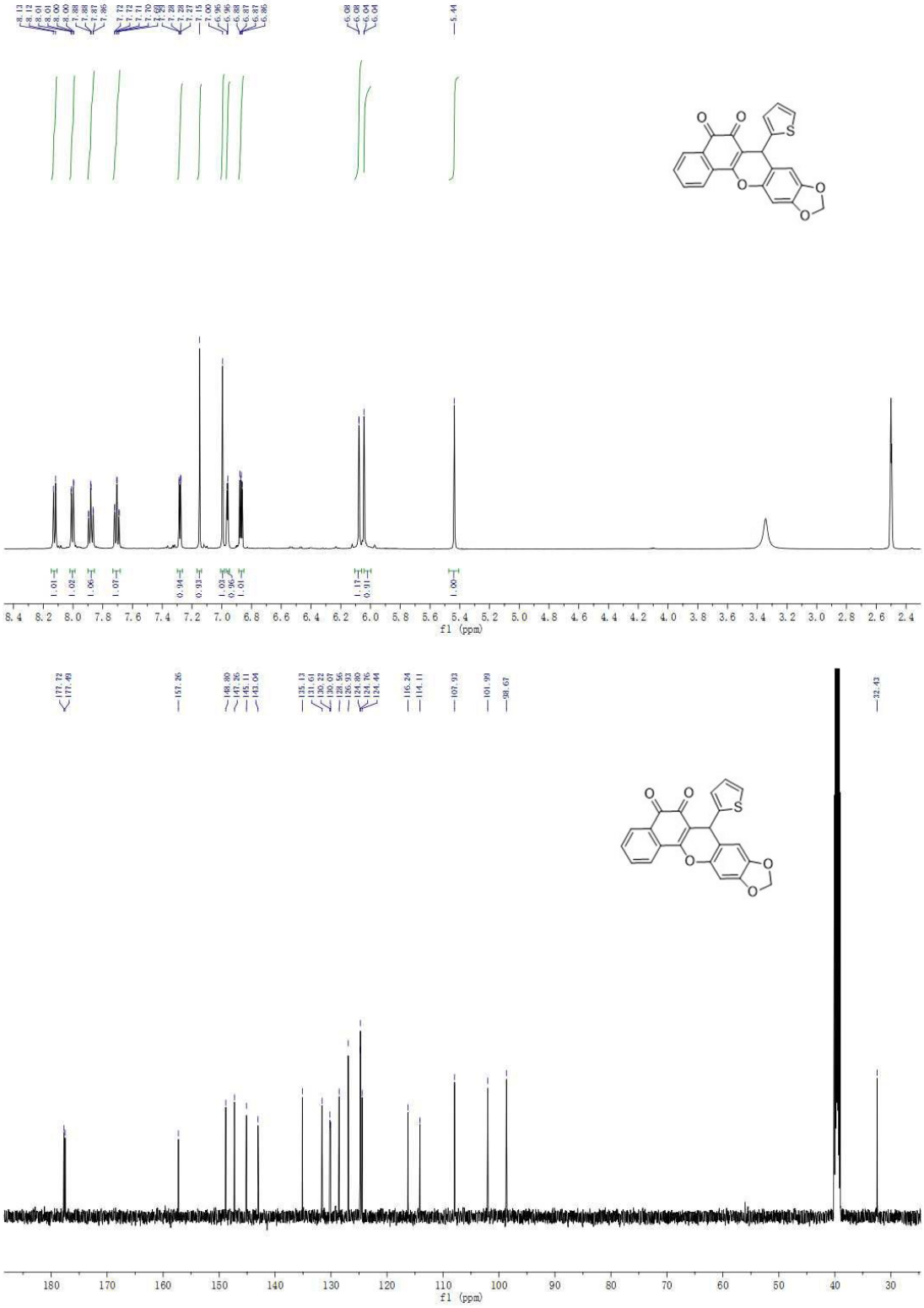
7-(3-nitrophenyl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2J):

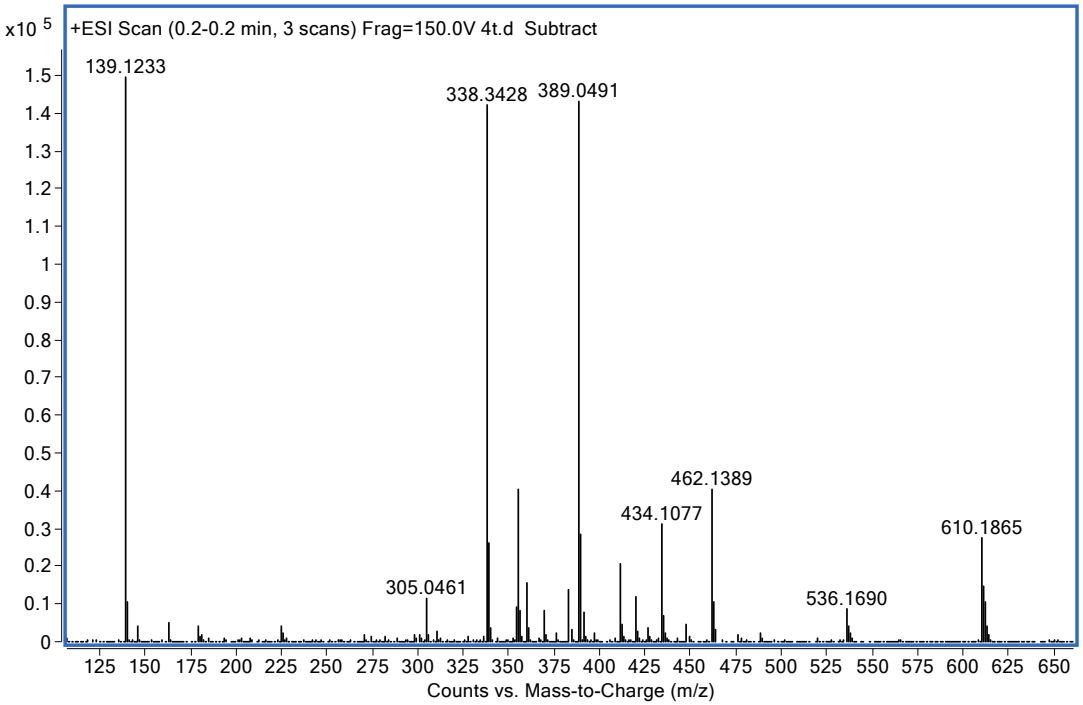



177.37
177.20
157.37
147.89
147.30
147.03
145.34
142.86
124.91
124.71
131.54
130.63
130.11
129.98
128.36
124.49
122.66
121.72
115.46
113.18
107.89
102.01
98.82
37.31
NO2
O
O
O
O
O
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
f1 (ppm)

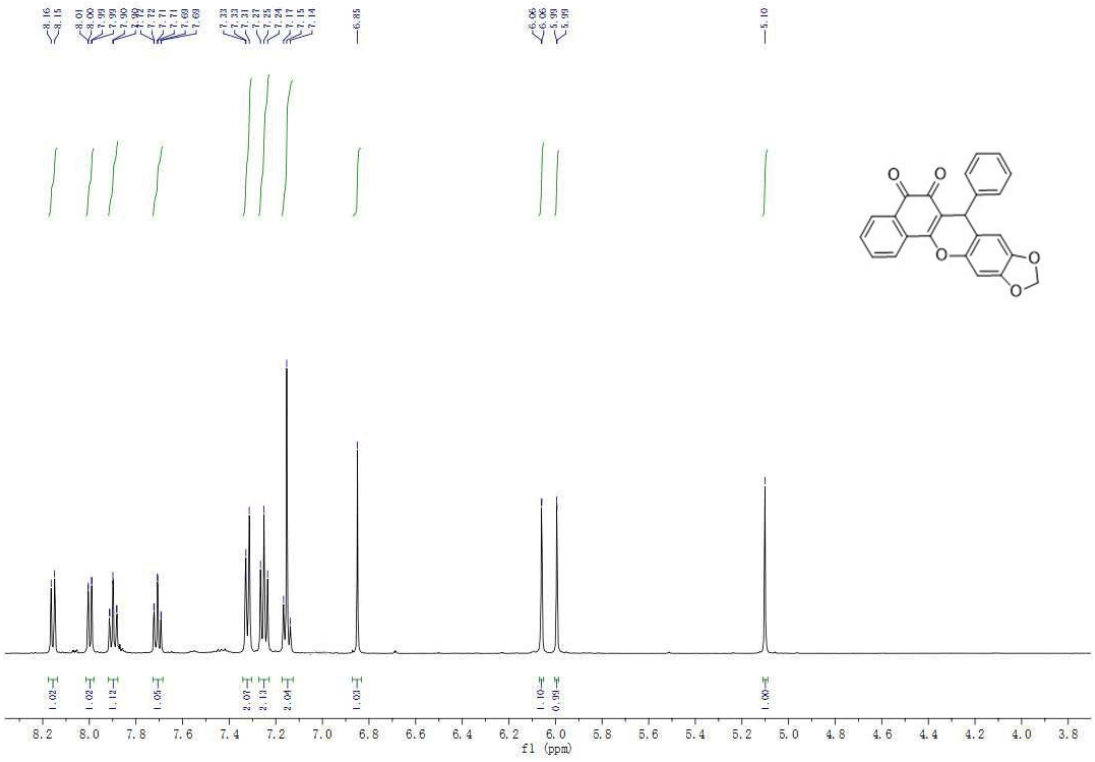

x10 5
+ESI Scan (0.2-0.2 min, 4 scans) Frag=150.0V 4e.d Subtract (2)
139.1232
338.3419
428.0763
610.1821
684.2007
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
150
200
250
300
350
400
450
500
550
600
650
700
Counts vs. Mass-to-Charge (m/z)

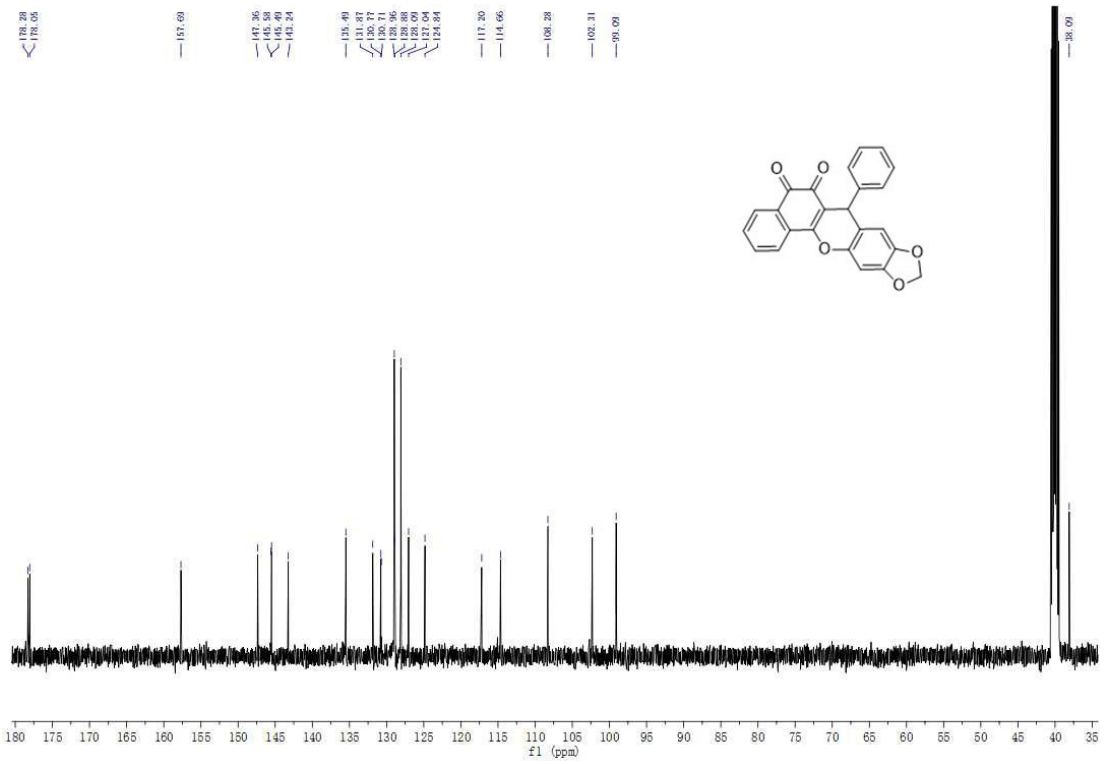
7-(thiophen-2-yl)-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2K):

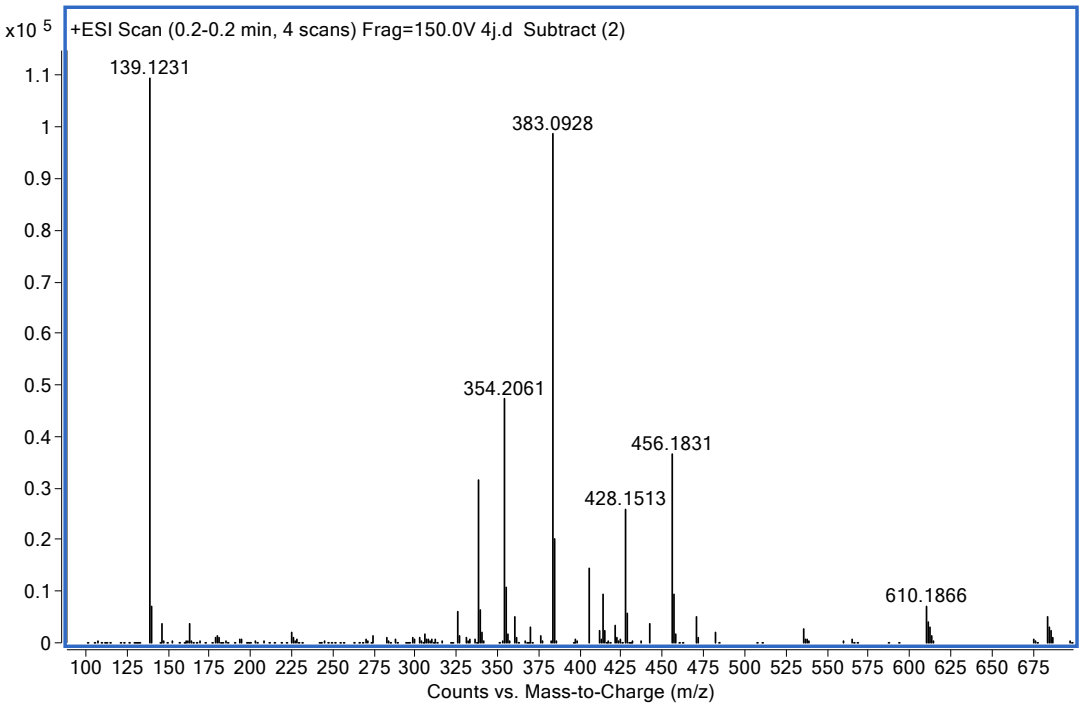




7-phenyl-6H-benzo[h][1,3]dioxolo[4,5-b]xanthene-5,6(7H)-dione (2L):




178.28
178.05
157.69
147.36
145.58
145.49
143.24
135.49
131.87
130.77
130.71
128.96
128.88
128.09
127.04
124.84
117.20
114.66
108.28
102.31
99.09
38.09
O
O
O
O
O
180 175 170 165 160 155 150 145 140 135 130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35
f1 (ppm)


x10 5
+ESI Scan (0.2-0.2 min, 4 scans) Frag=150.0V 4j.d Subtract (2)
139.1231
383.0928
354.2061
456.1831
428.1513
610.1866
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
100 125 150 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525 550 575 600 625 650 675
Counts vs. Mass-to-Charge (m/z)