

Supporting information

Design, synthesis, and antifungal activity of 14-aryloxy/amide substituted andrographolide derivatives

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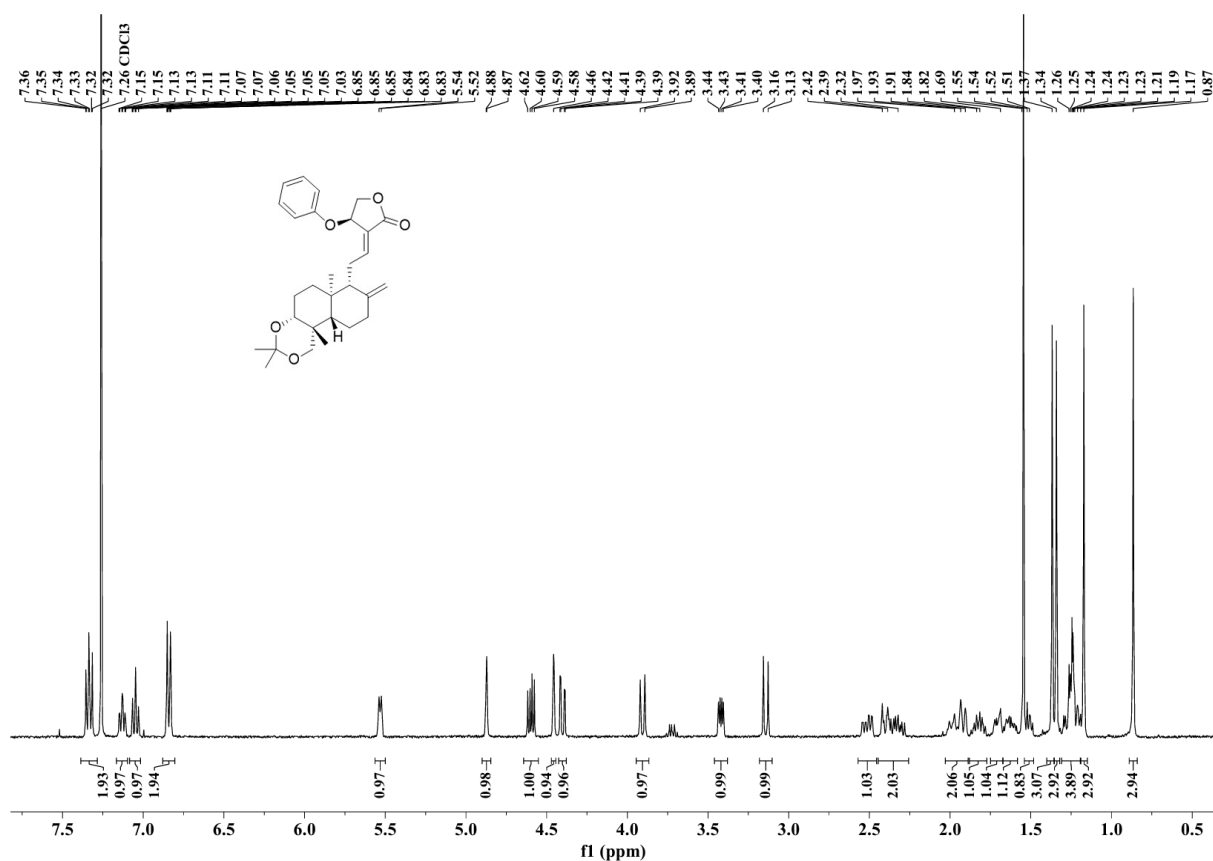


Figure S1 ^1H NMR spectrum of compound **3a** (CDCl_3)

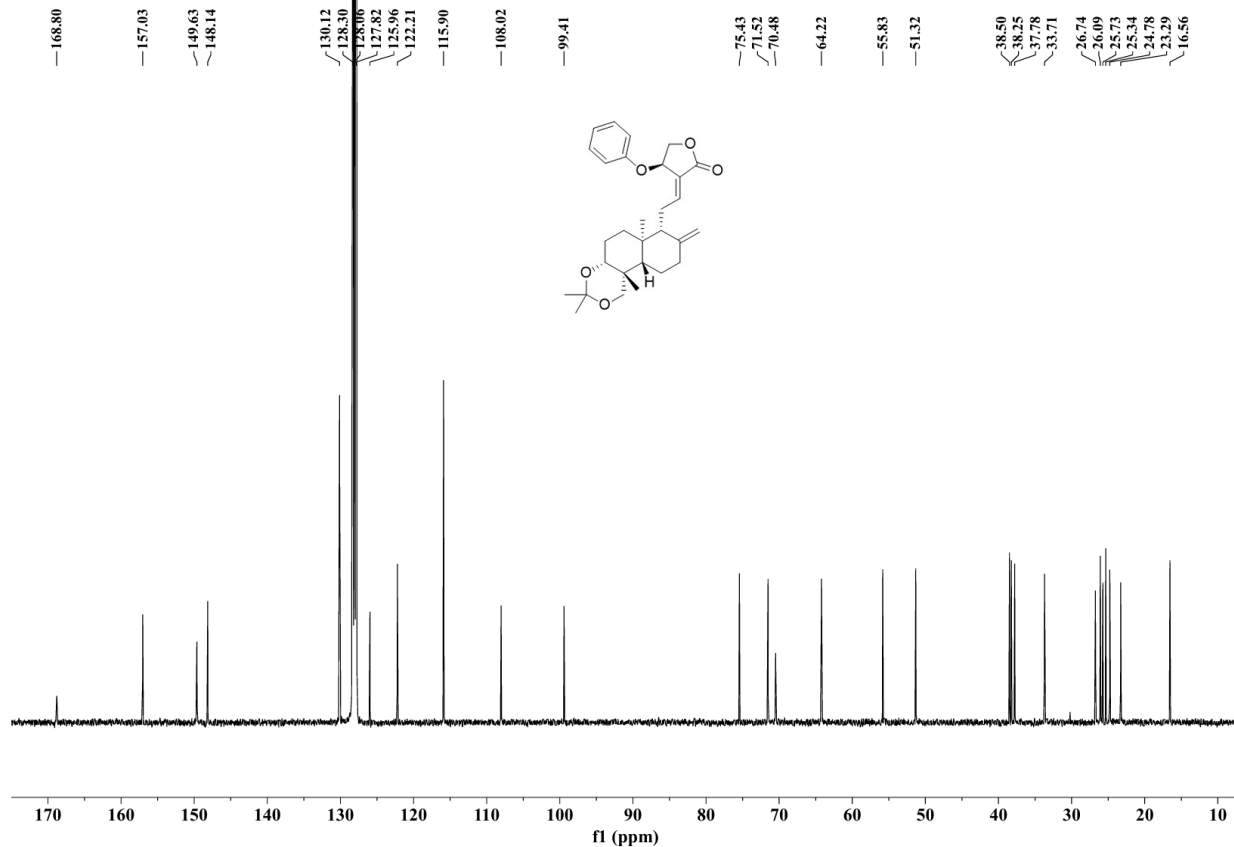
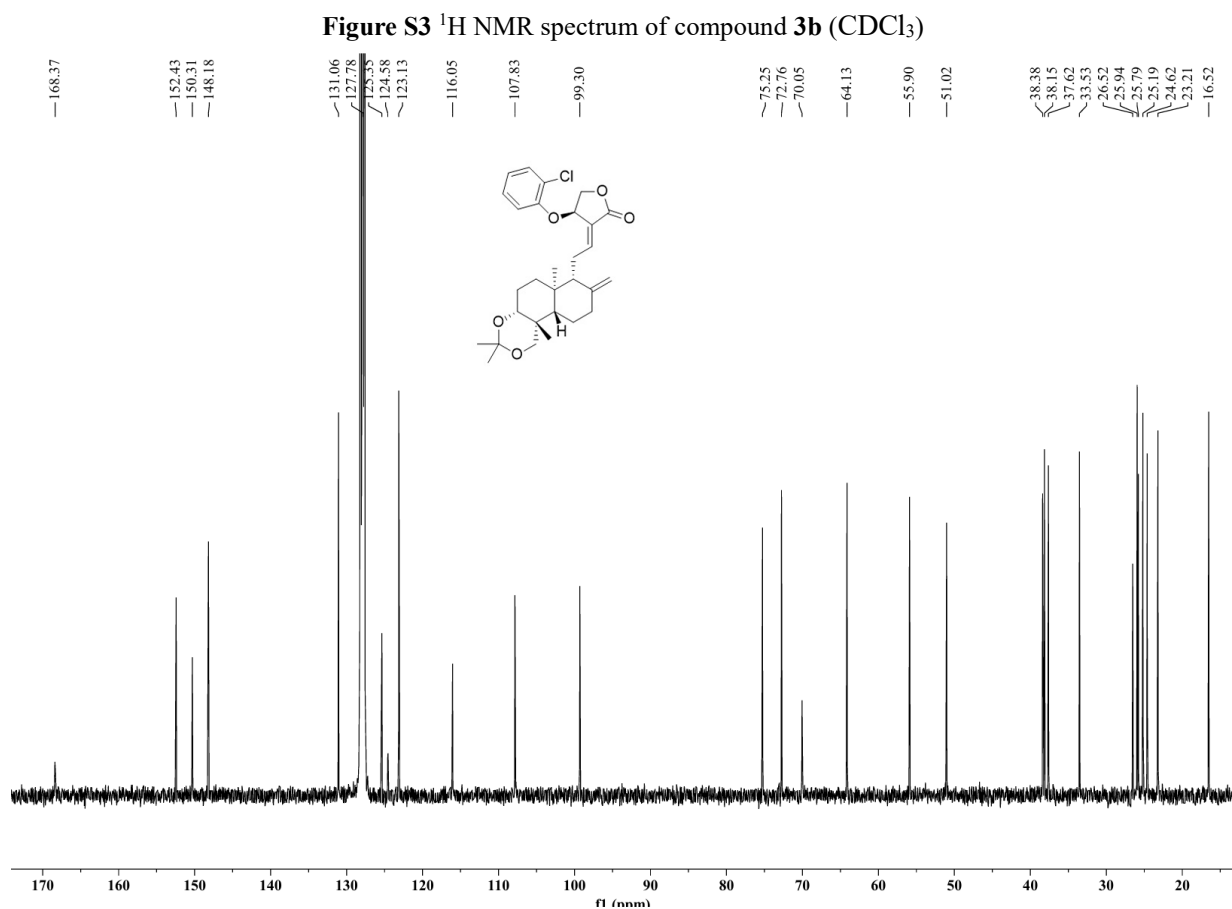
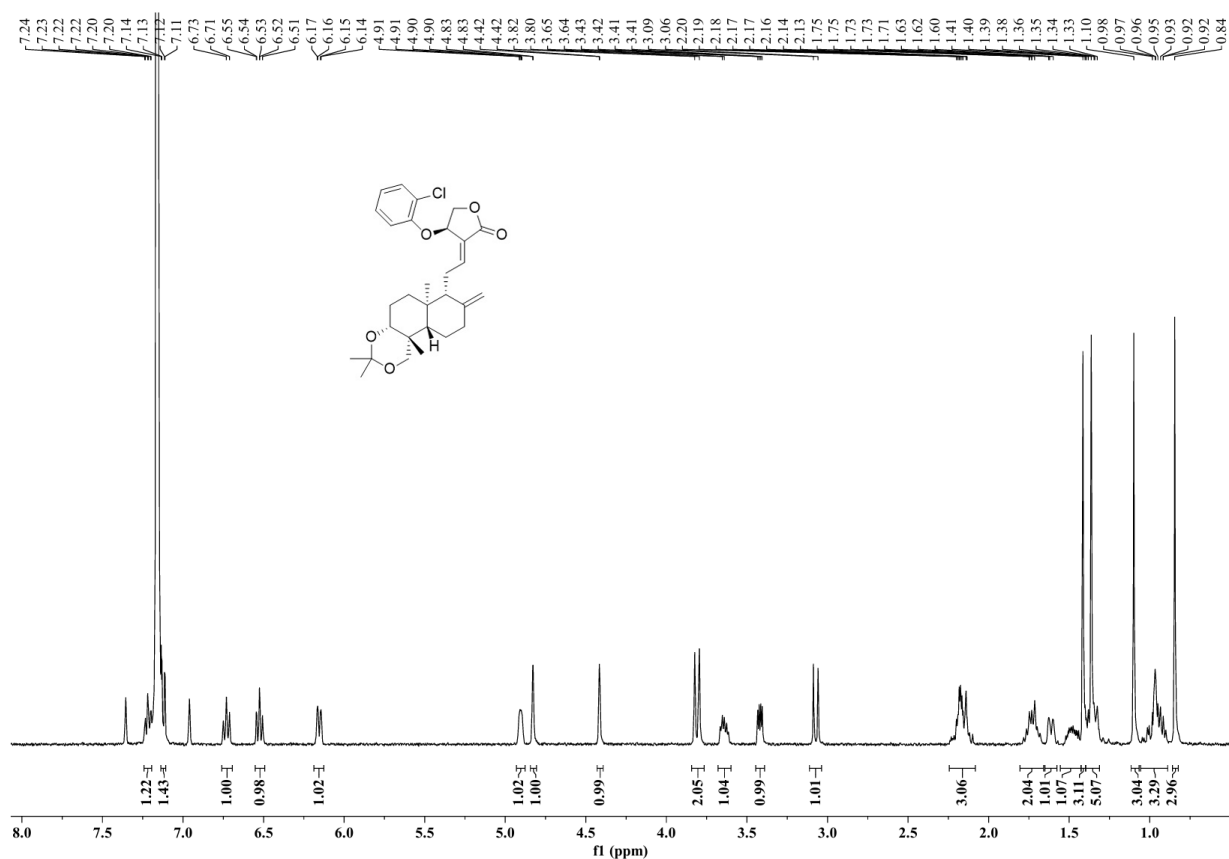


Figure S2 ^{13}C NMR spectrum of compound **3a** (C_6D_6)



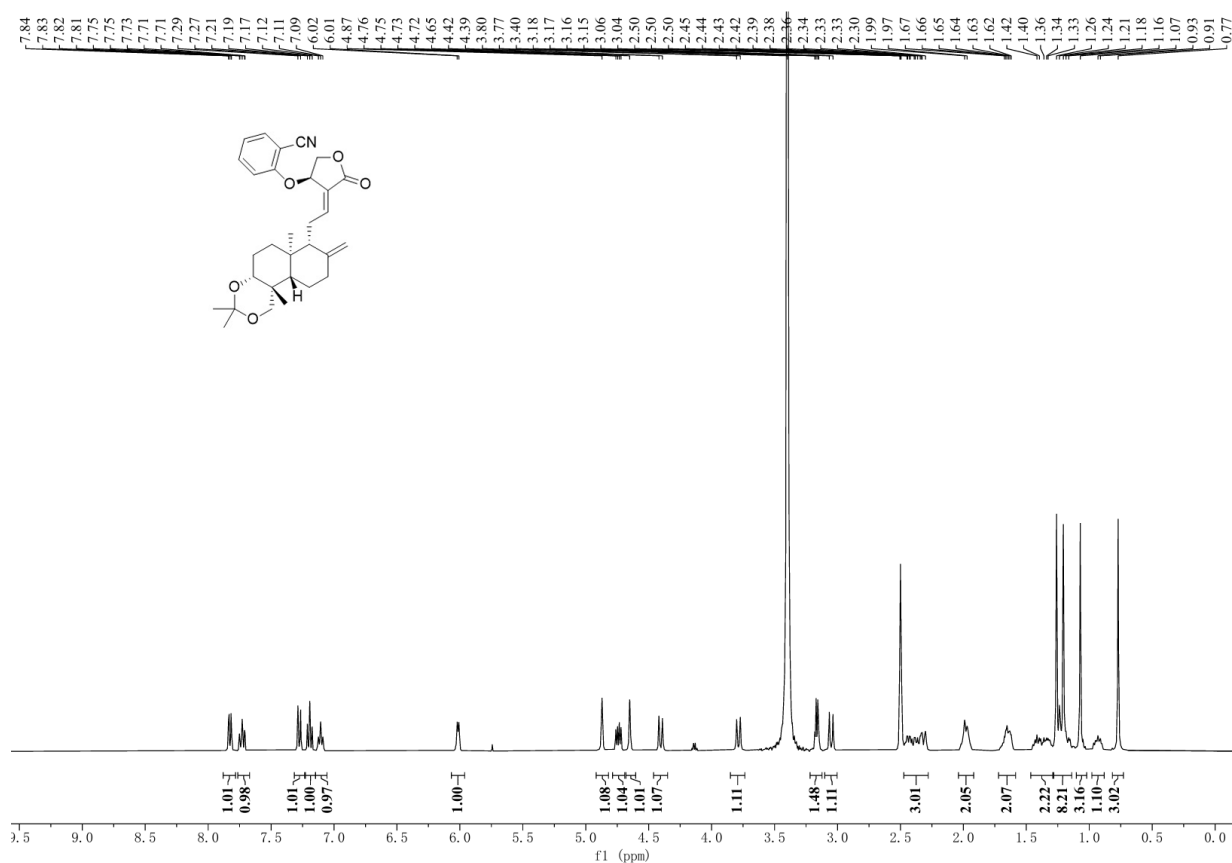


Figure S5 ¹H NMR spectrum of compound **3c** (DMSO-*d*₆)

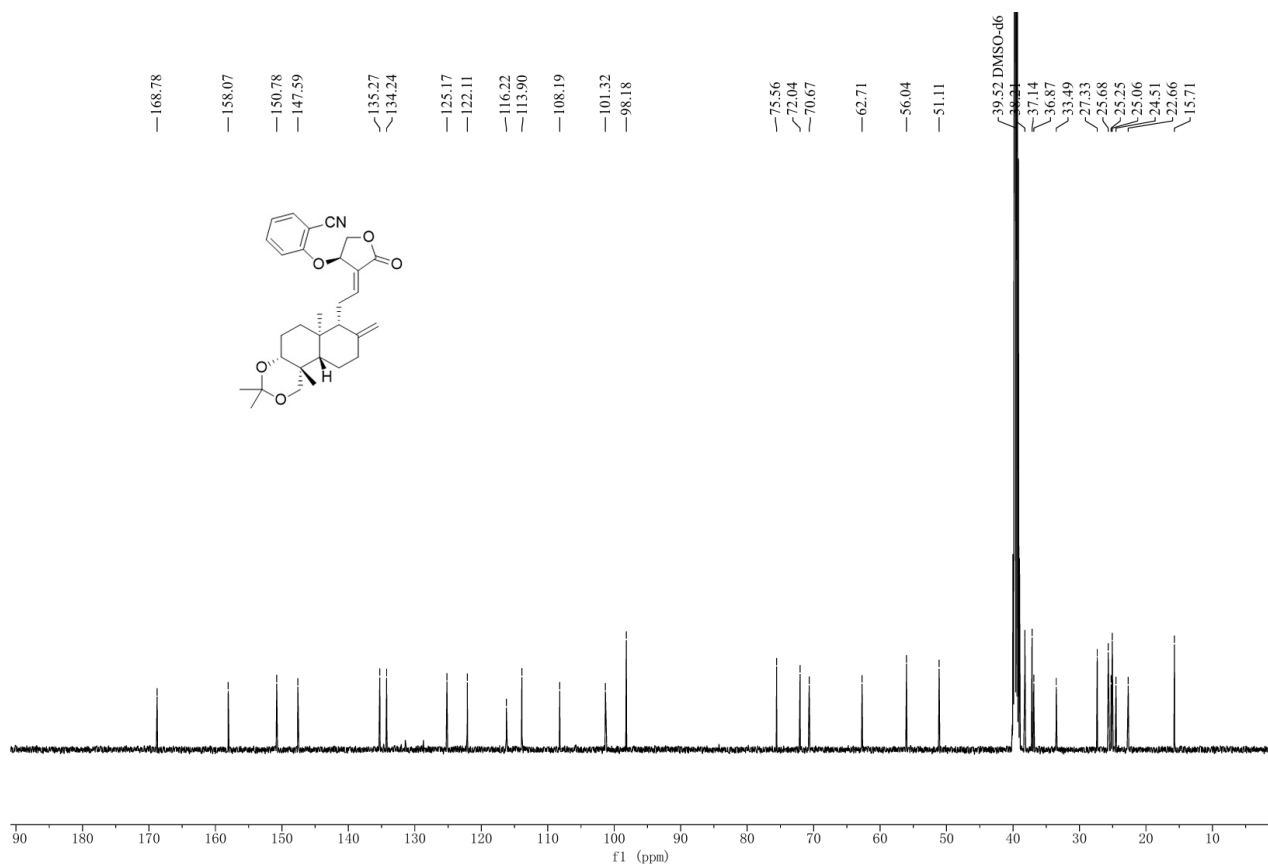


Figure S6 ¹³C NMR spectrum of compound **3c** (DMSO-*d*₆)

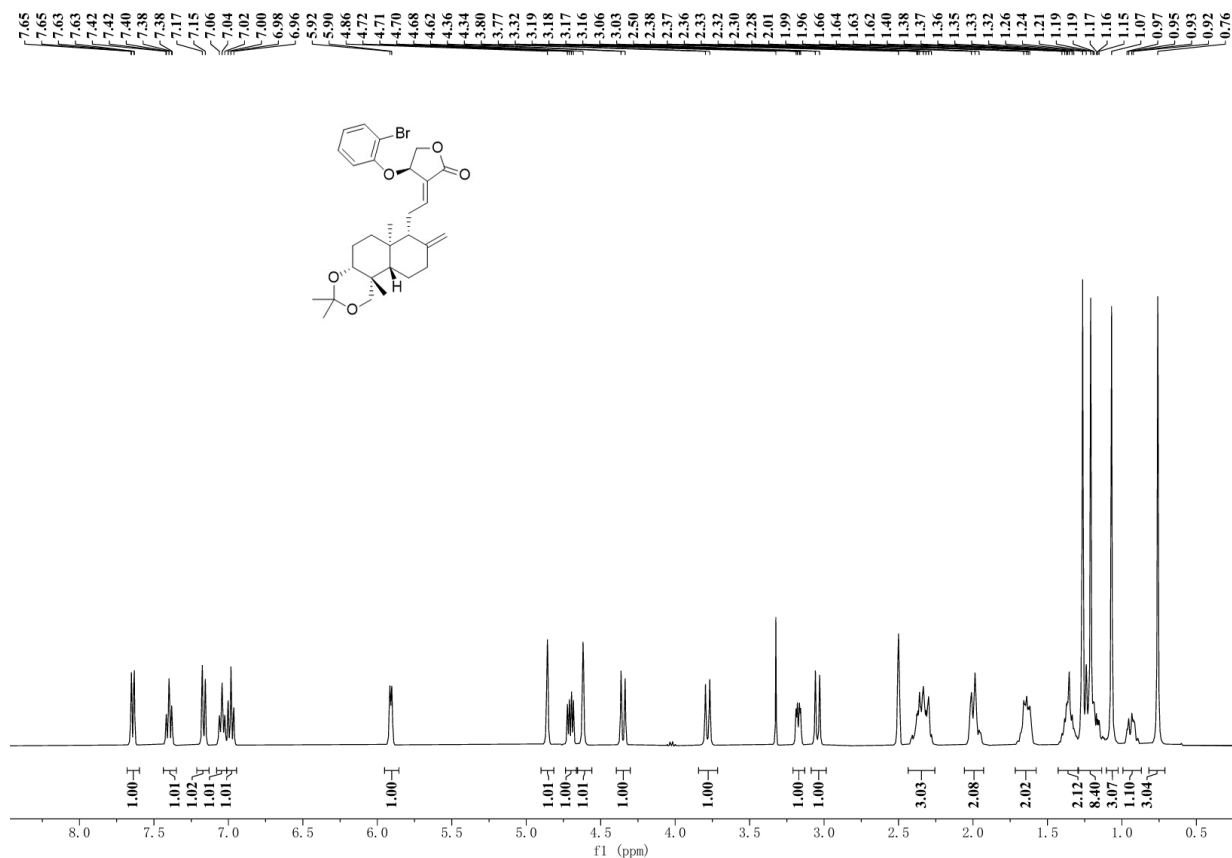


Figure S7 ¹H NMR spectrum of compound 3d (DMSO-*d*₆)

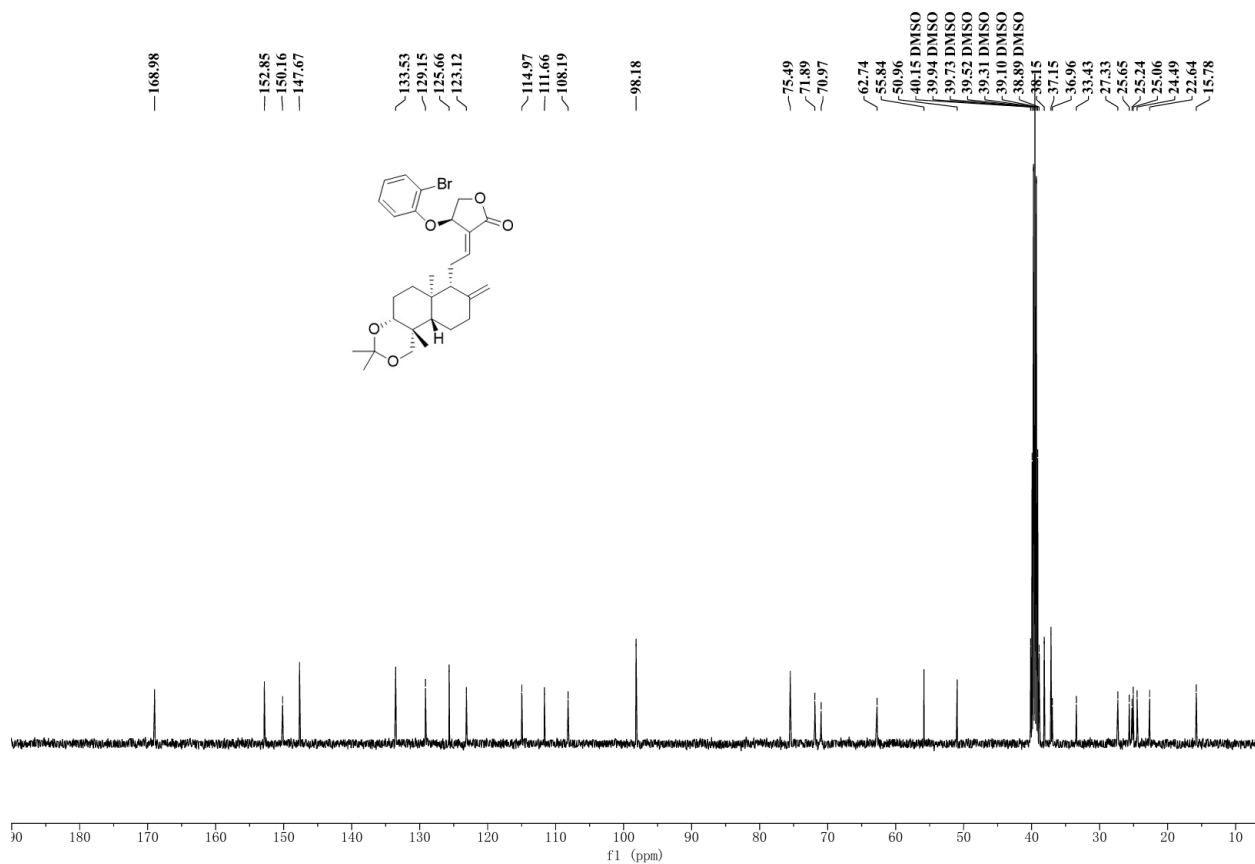
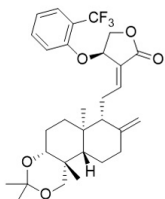


Figure S8 ¹³C NMR spectrum of compound 3d (DMSO-*d*₆)



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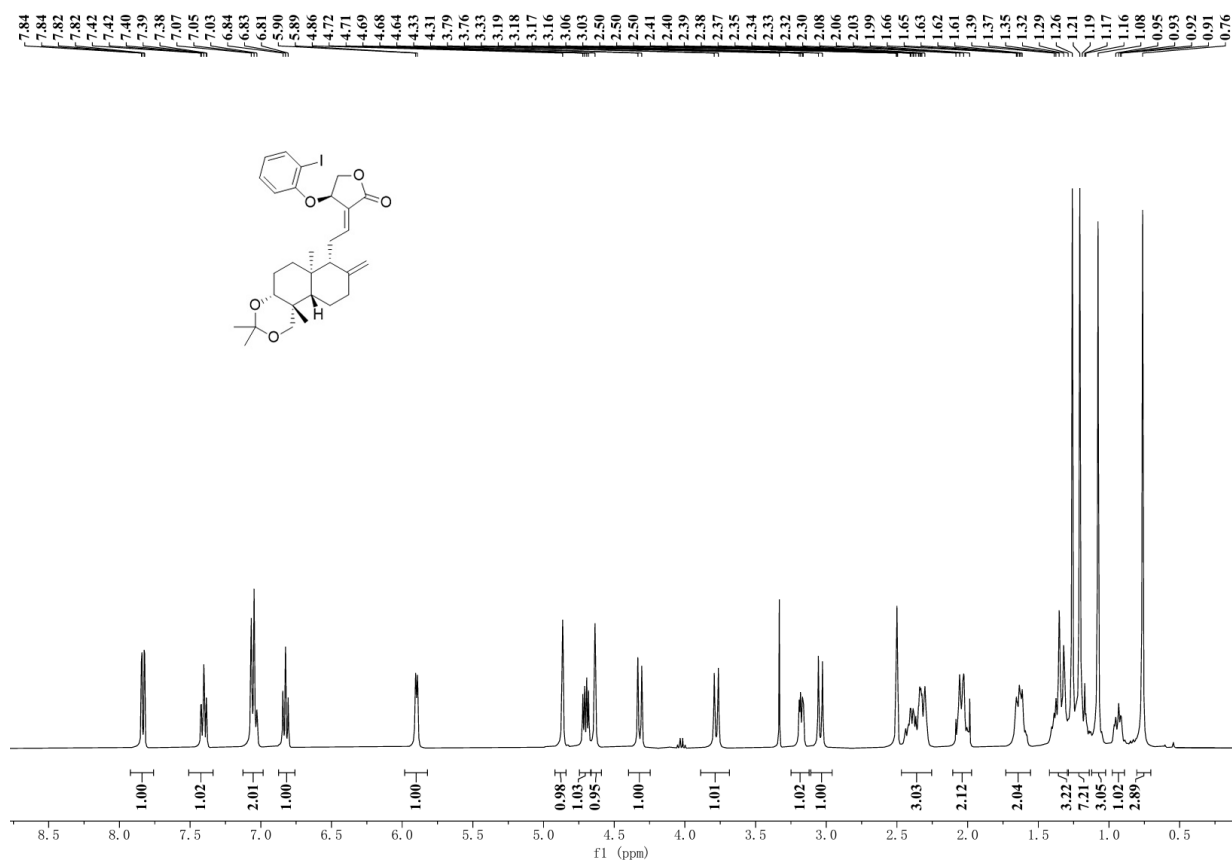


Figure S11 ¹H NMR spectrum of compound **3f** (DMSO-*d*₆)

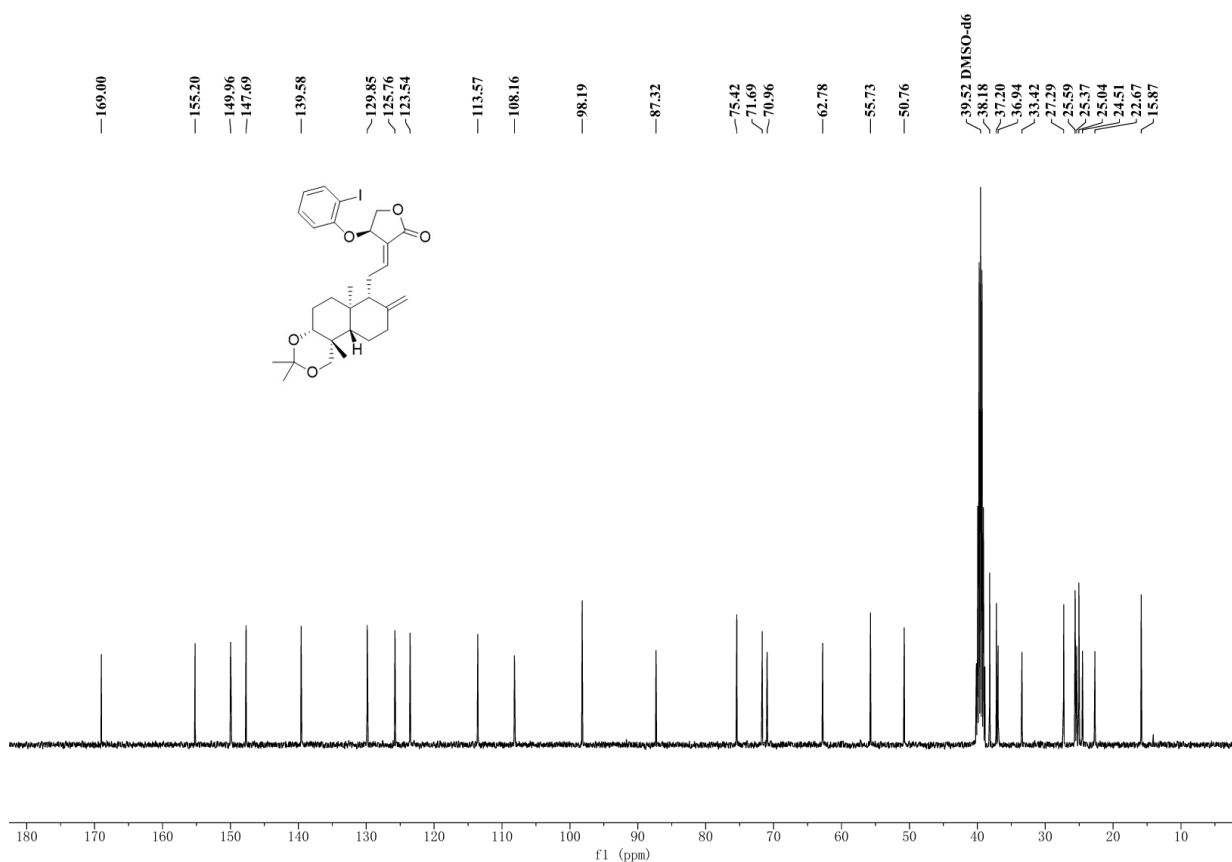


Figure S12 ¹³C NMR spectrum of compound **3f** (DMSO-*d*₆)

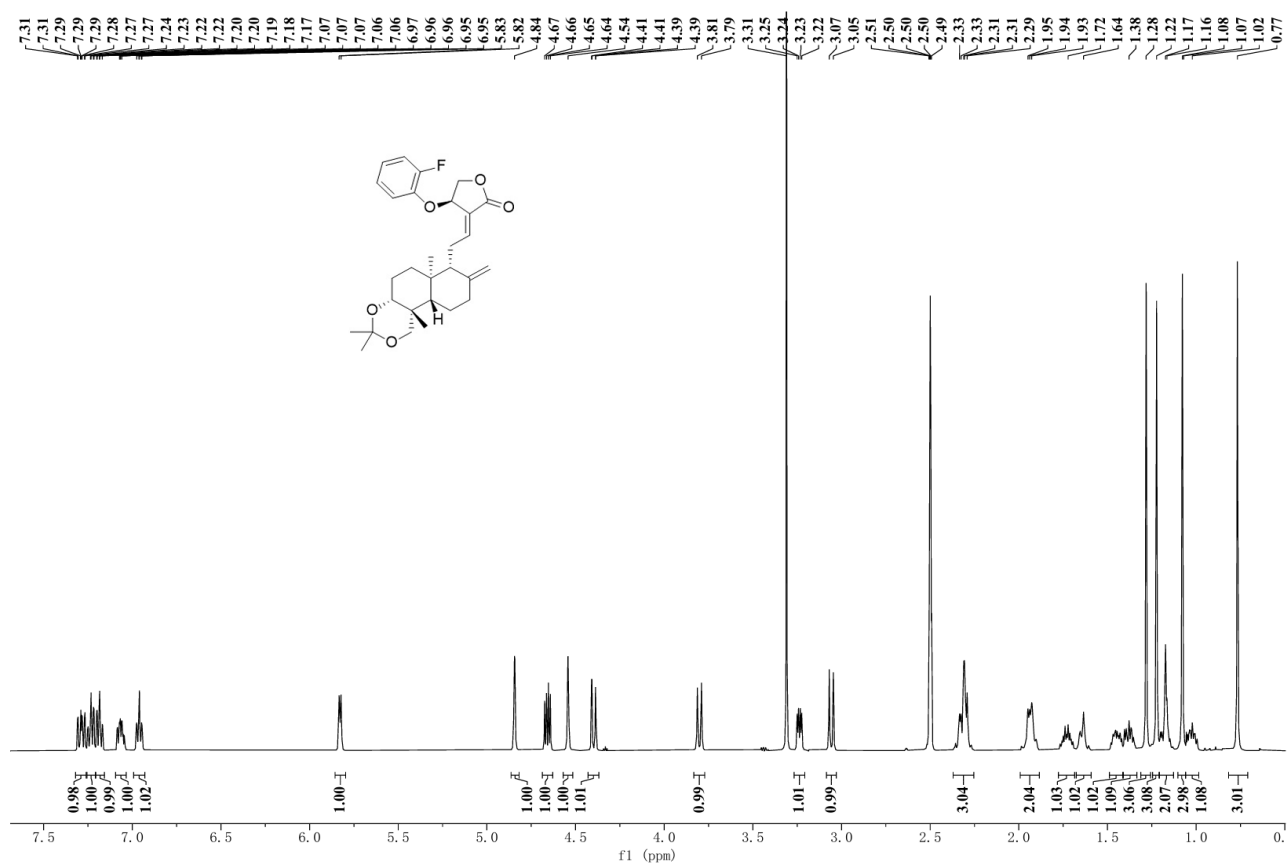


Figure S13 ^1H NMR spectrum of compound **3g** (DMSO- d_6)

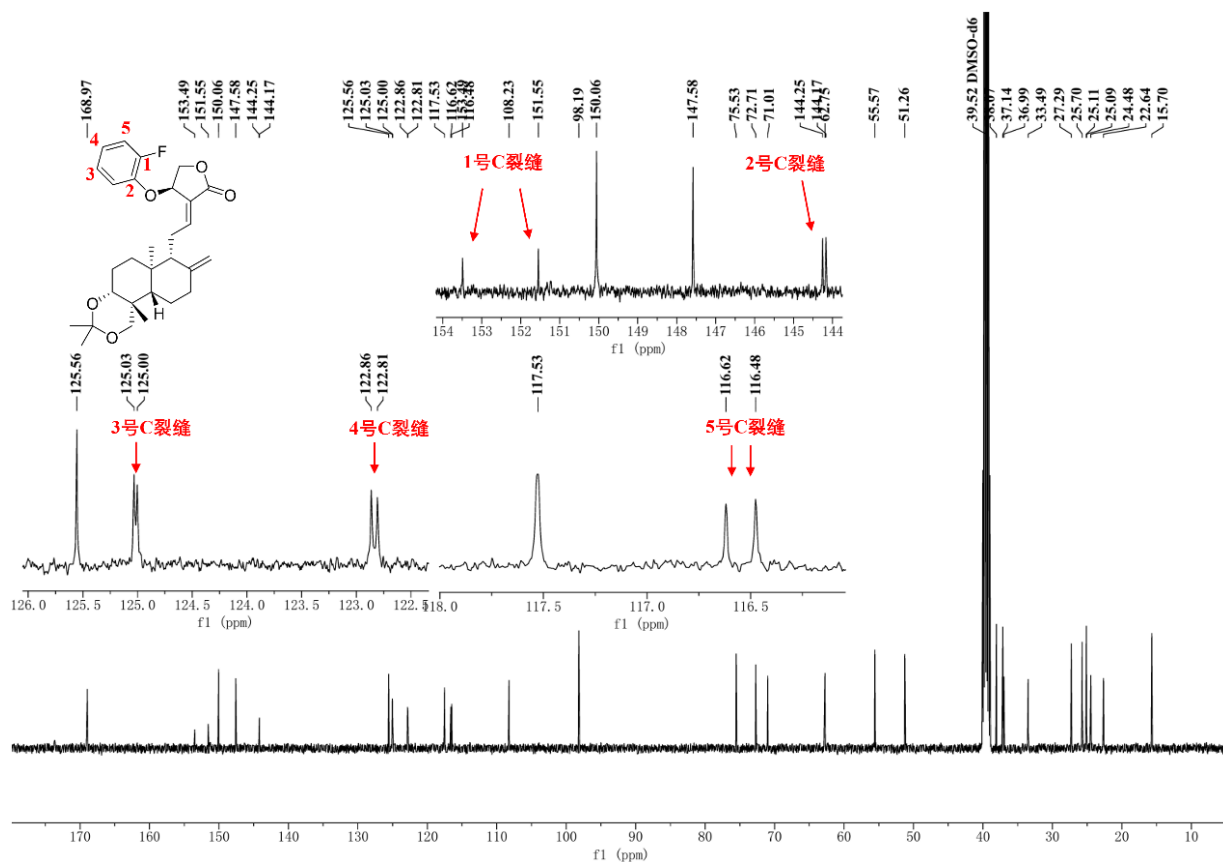


Figure S14 ^{13}C NMR spectrum of compound **3g** (DMSO- d_6)

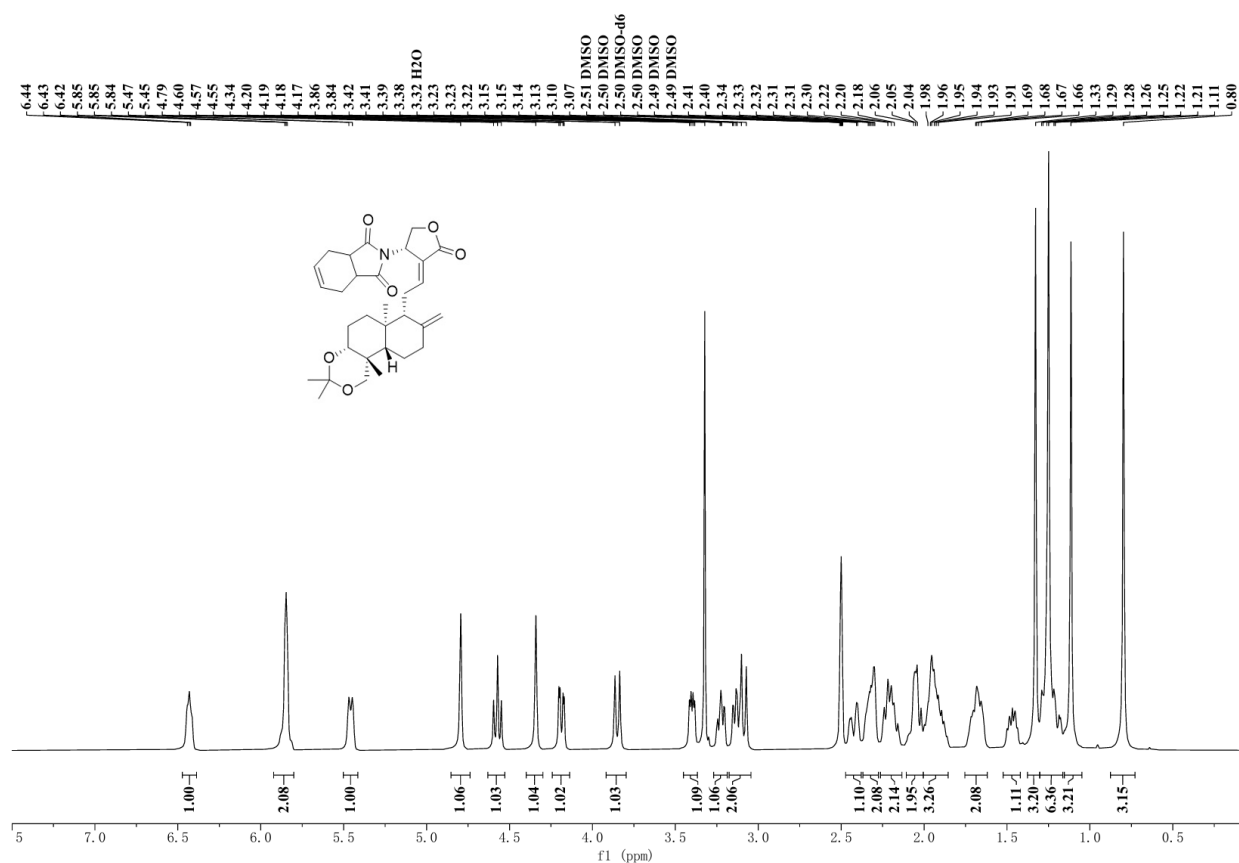


Figure S15 ¹H NMR spectrum of compound **3h** (DMSO-*d*₆)

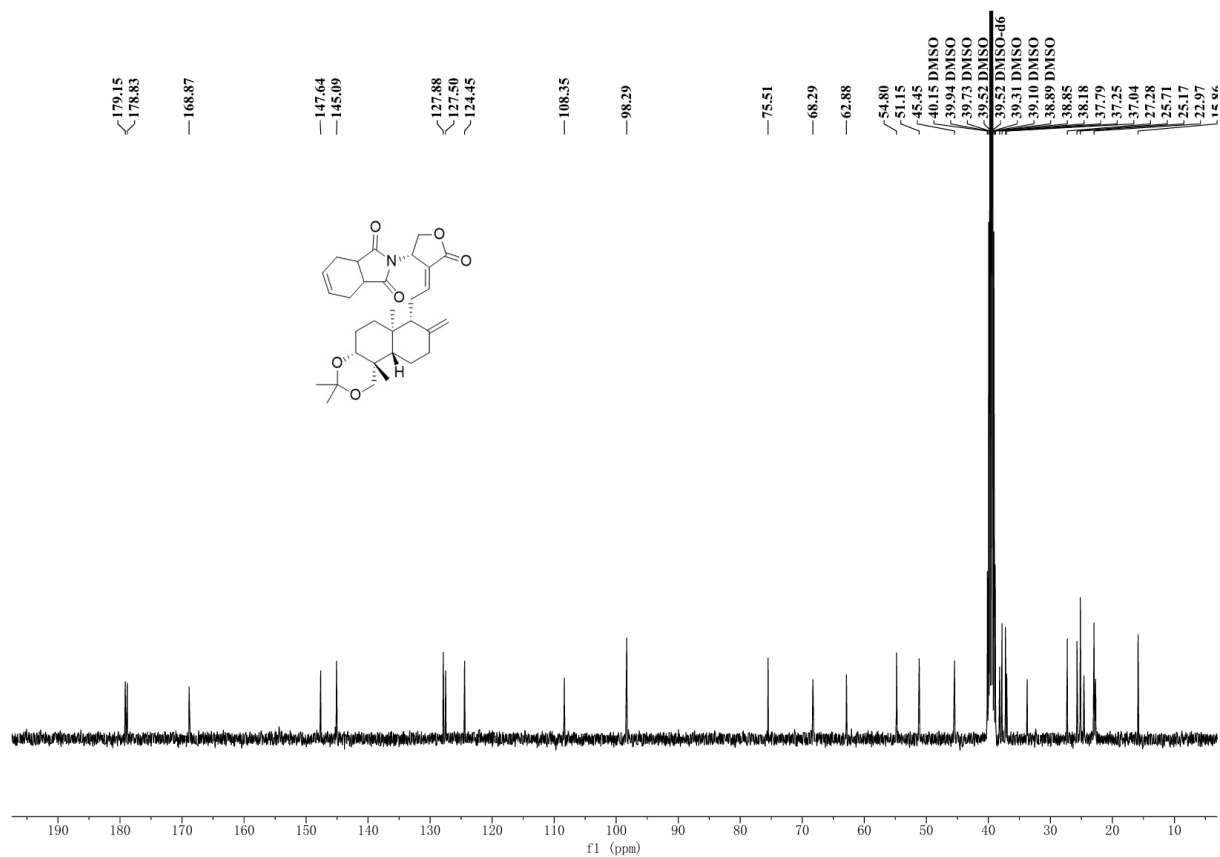


Figure S16 ¹³C NMR spectrum of compound **3h** (DMSO-*d*₆)

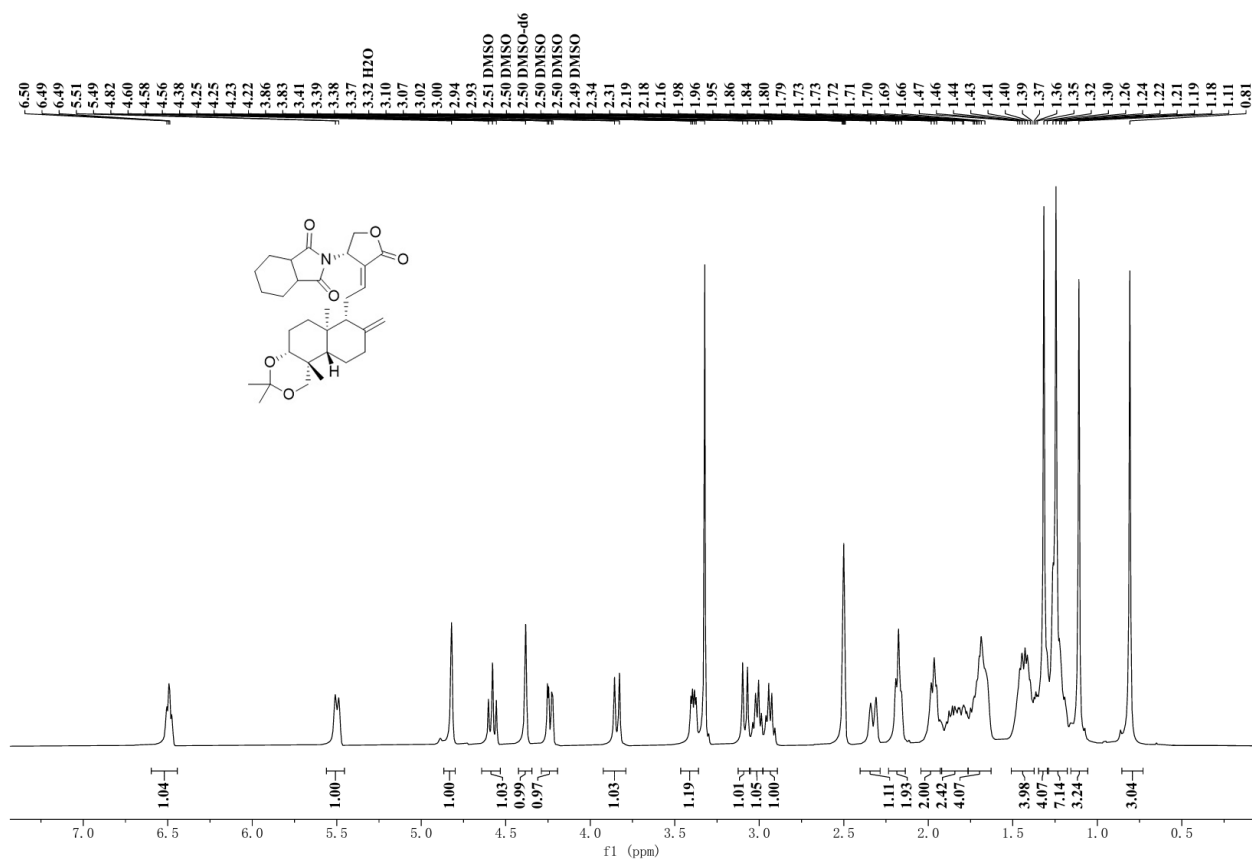


Figure S17 ¹H NMR spectrum of compound **3i** (DMSO-*d*₆)

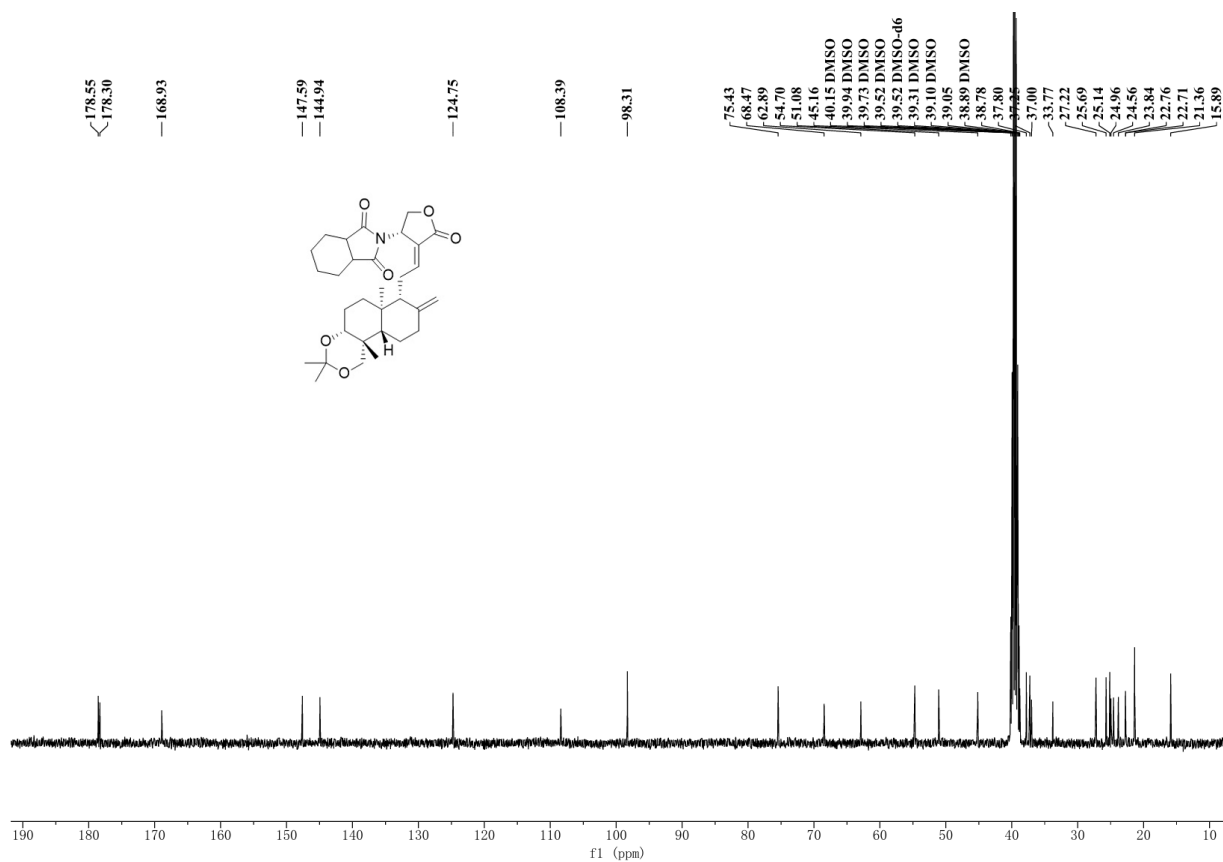


Figure S18 ¹³C NMR spectrum of compound **3i** (DMSO-*d*₆)

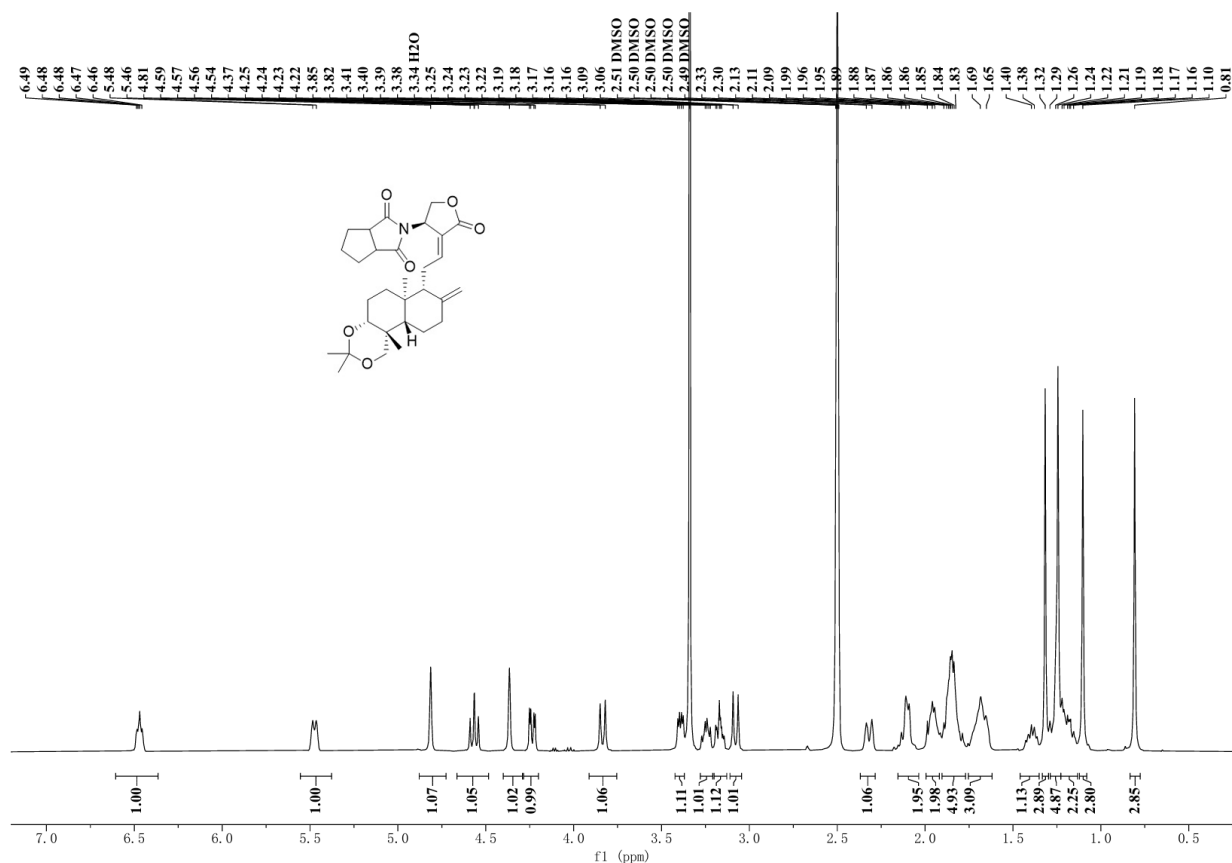


Figure S19 ¹H NMR spectrum of compound **3j** (DMSO-*d*₆)

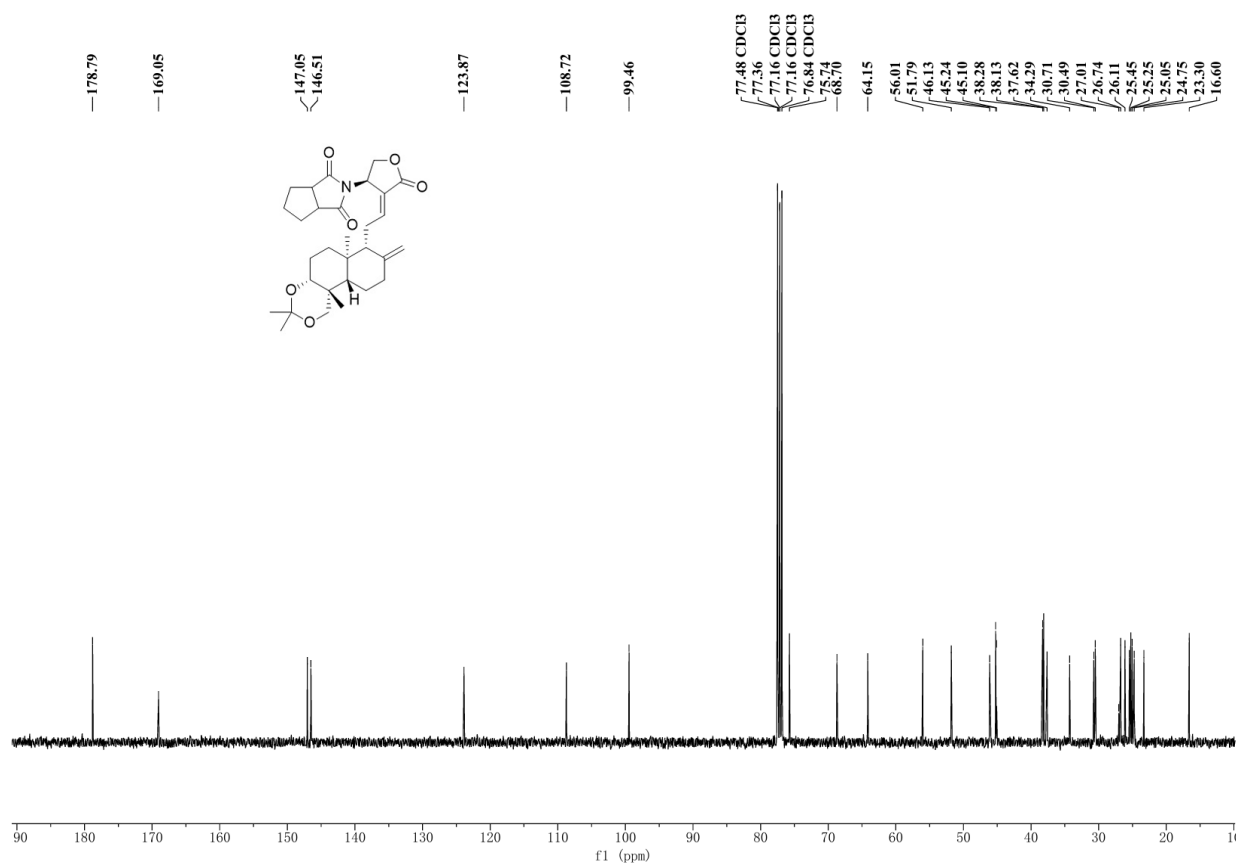


Figure S20 ¹³C NMR spectrum of compound **3j** (CDCl₃)

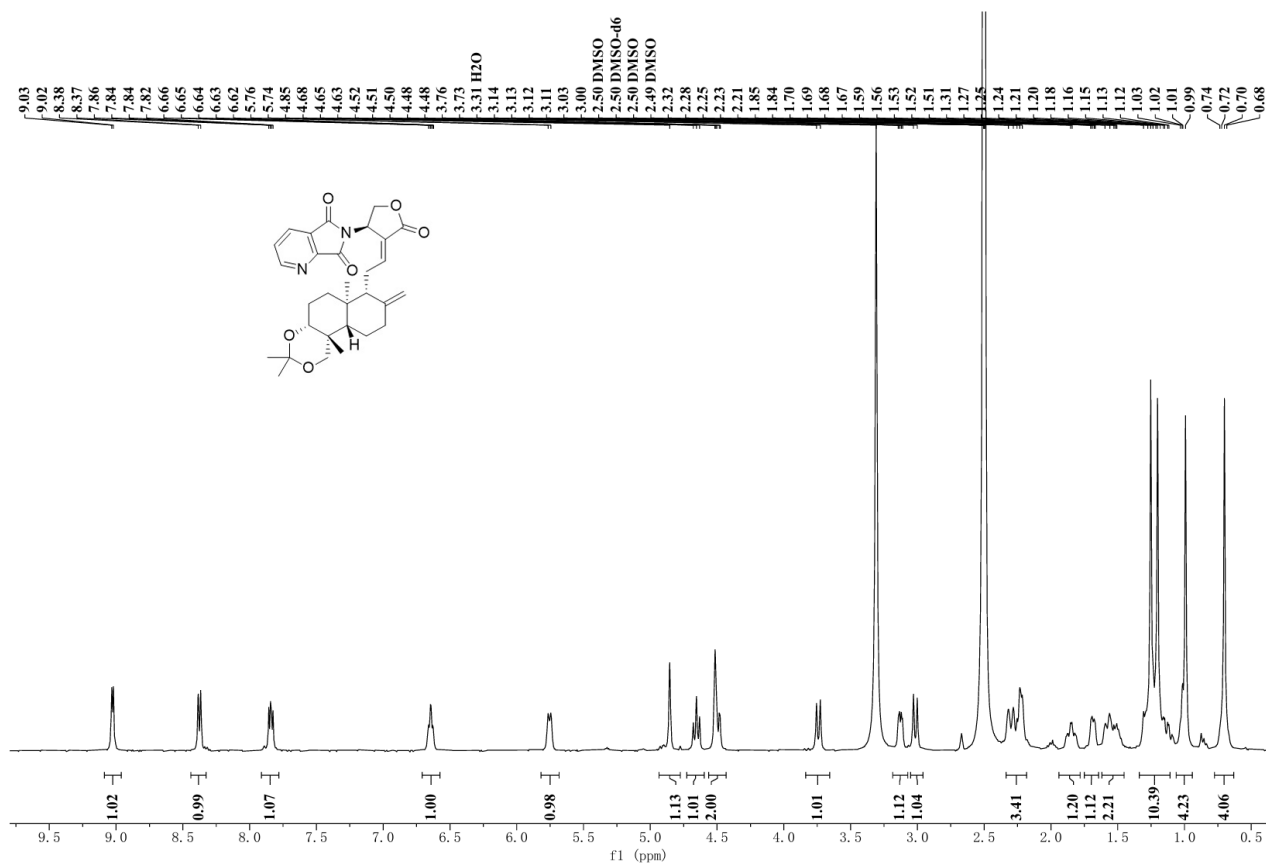


Figure S21 ¹H NMR spectrum of compound **3k** (DMSO-*d*₆)

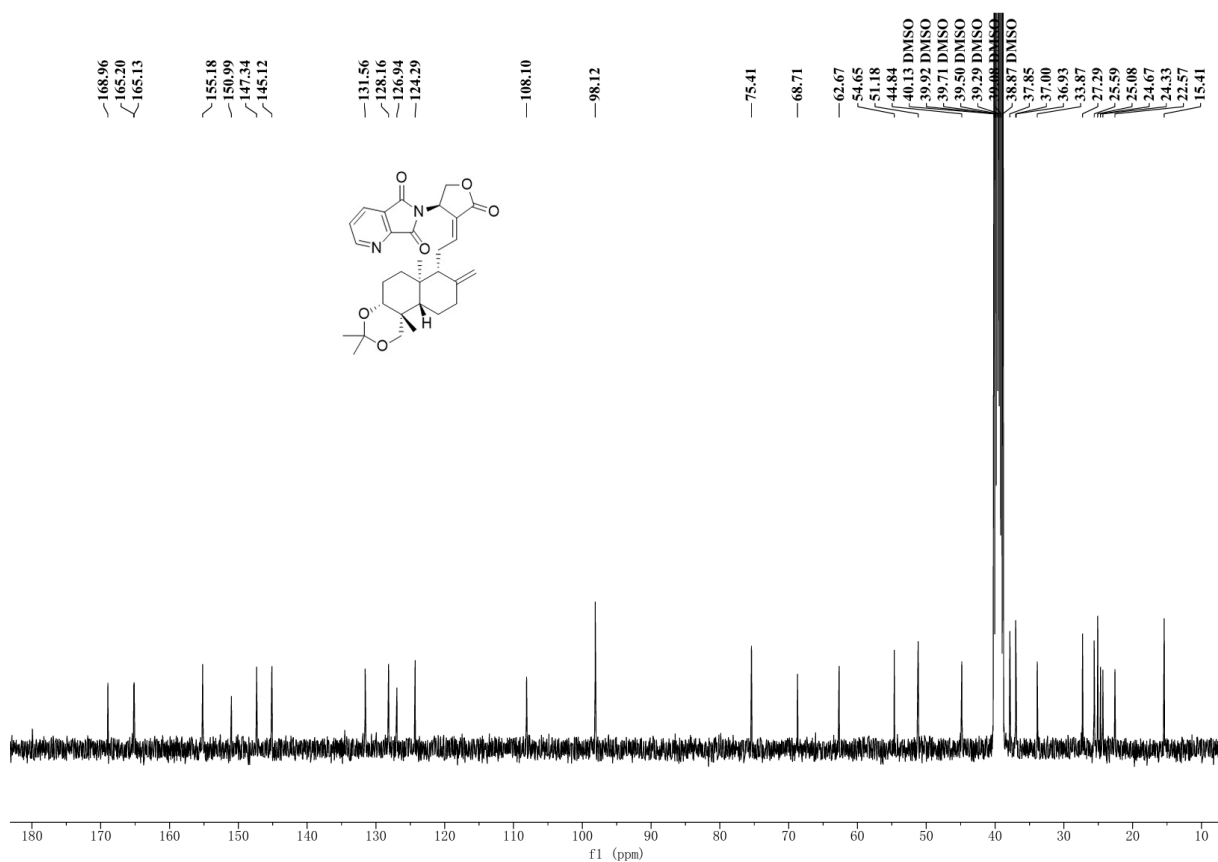


Figure S22 ¹³C NMR spectrum of compound **3k** (DMSO-*d*₆)

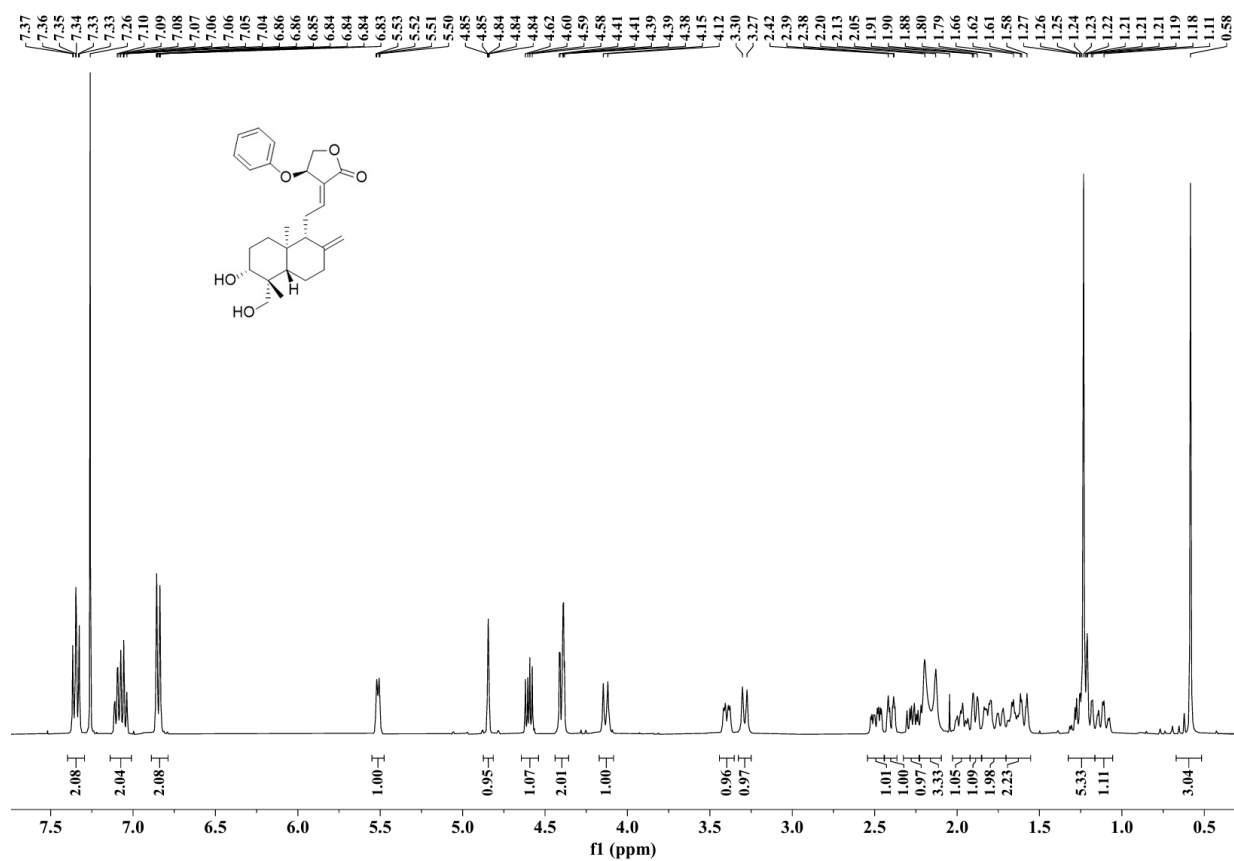


Figure S23 ¹H NMR spectrum of compound 4a (CDCl₃)

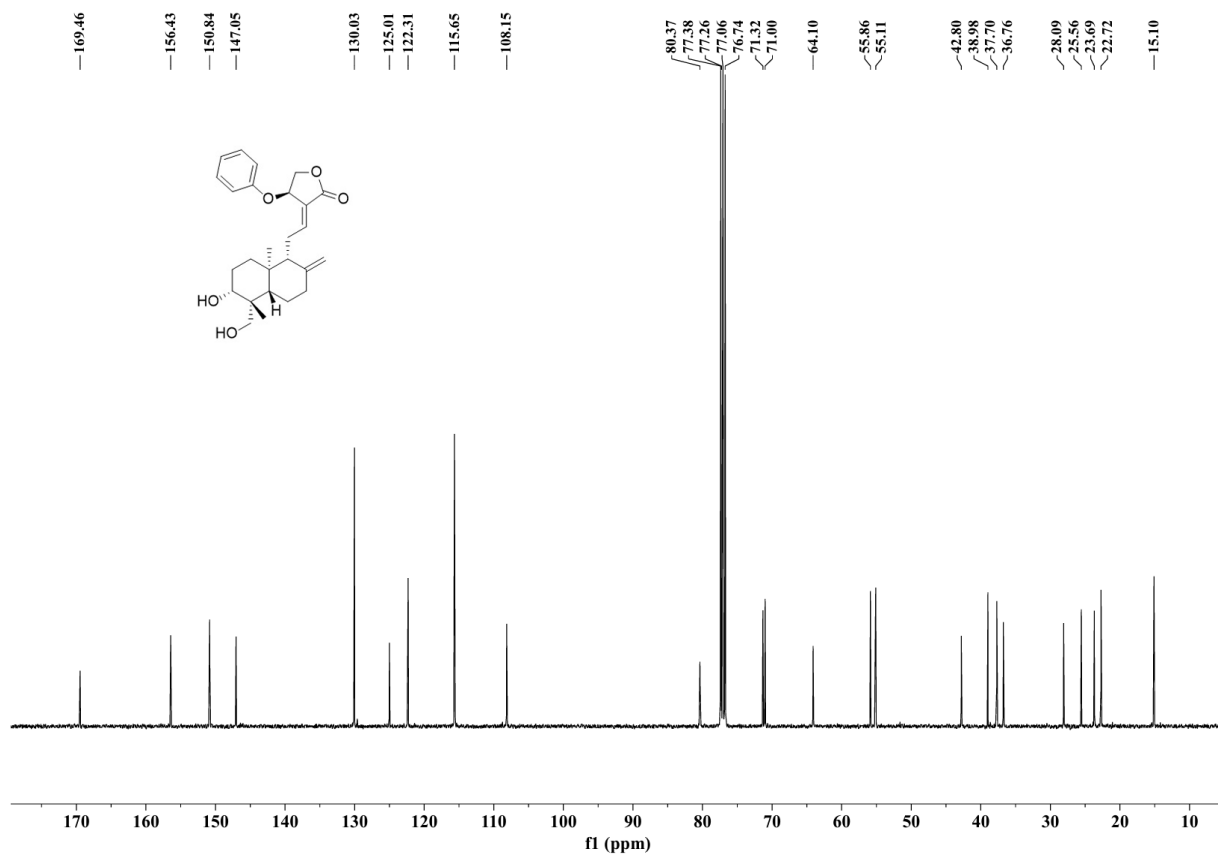


Figure S24 ¹³C NMR spectrum of compound 4a (C₆D₆)

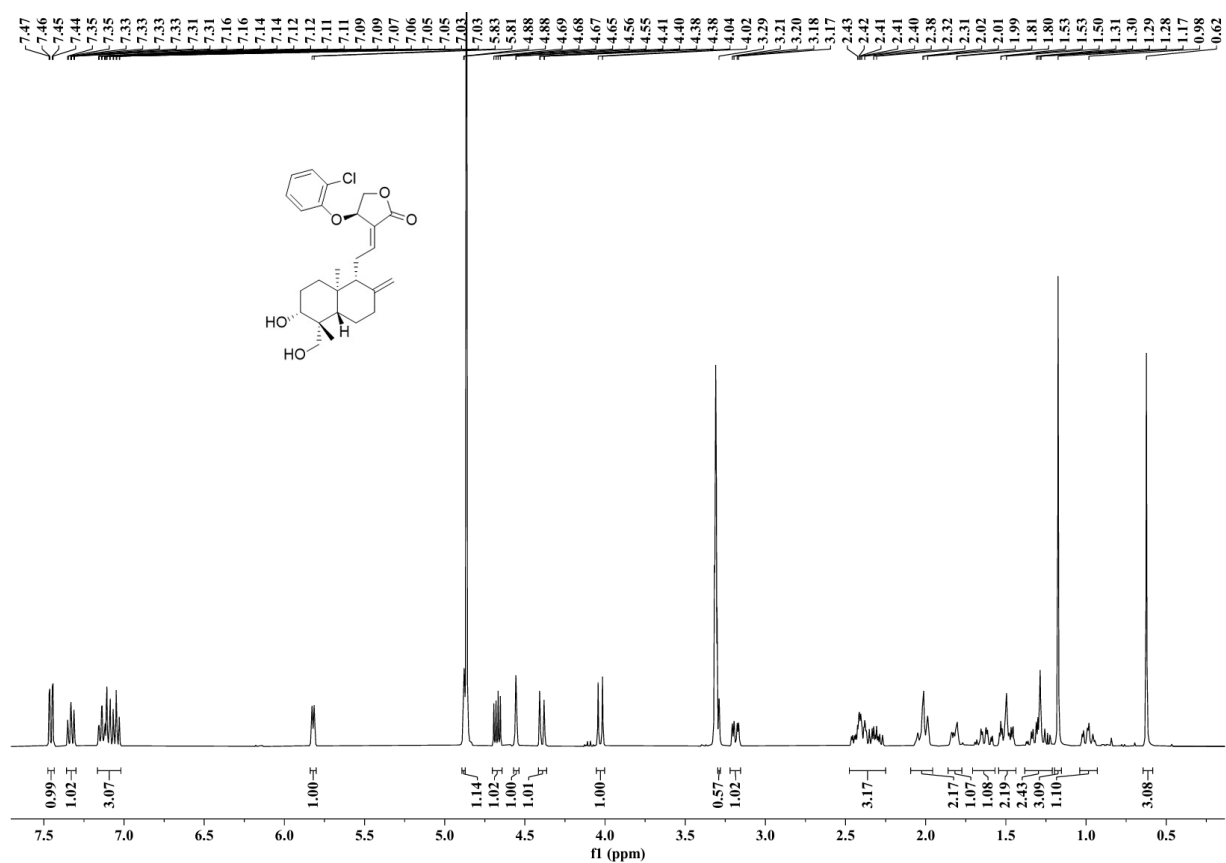


Figure S25 ¹H NMR spectrum of compound **4b** (DMSO-*d*₆)

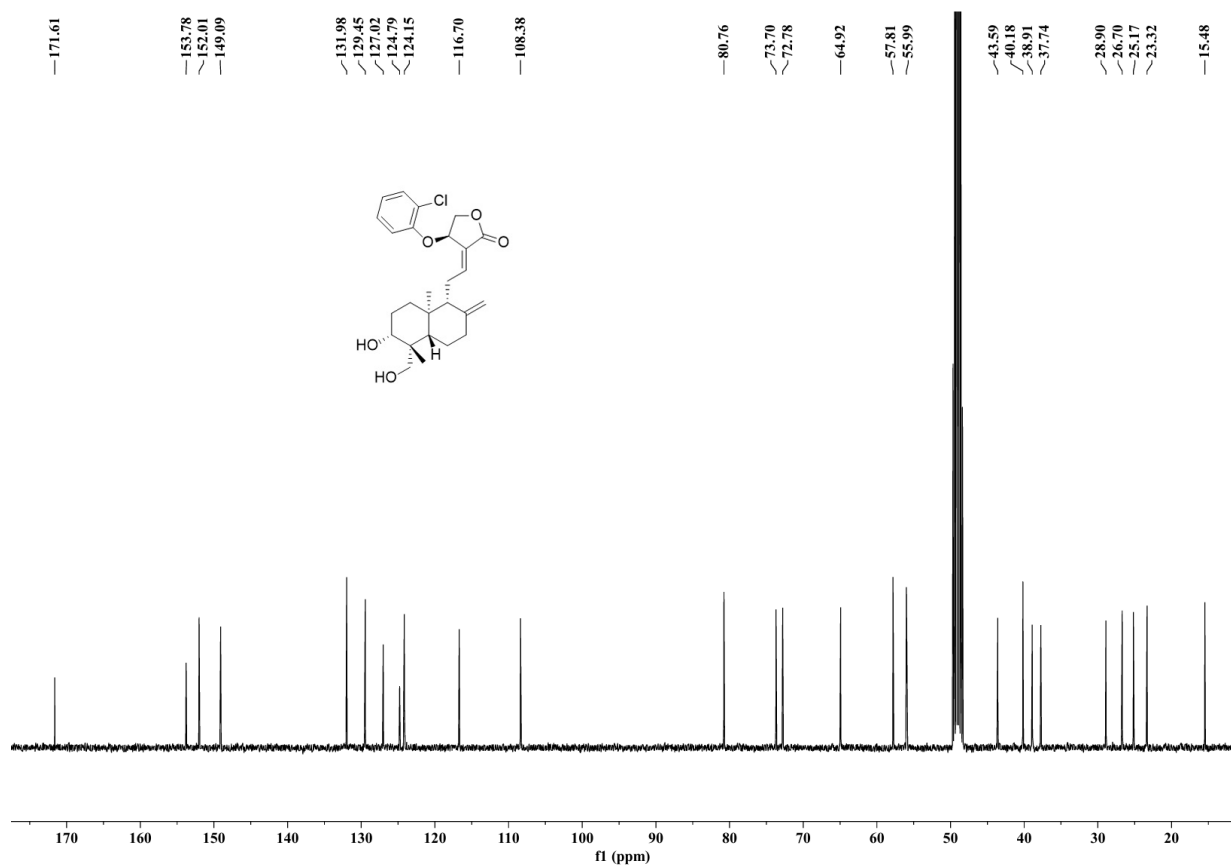


Figure S26 ¹³C NMR spectrum of compound **4b** (DMSO-*d*₆)

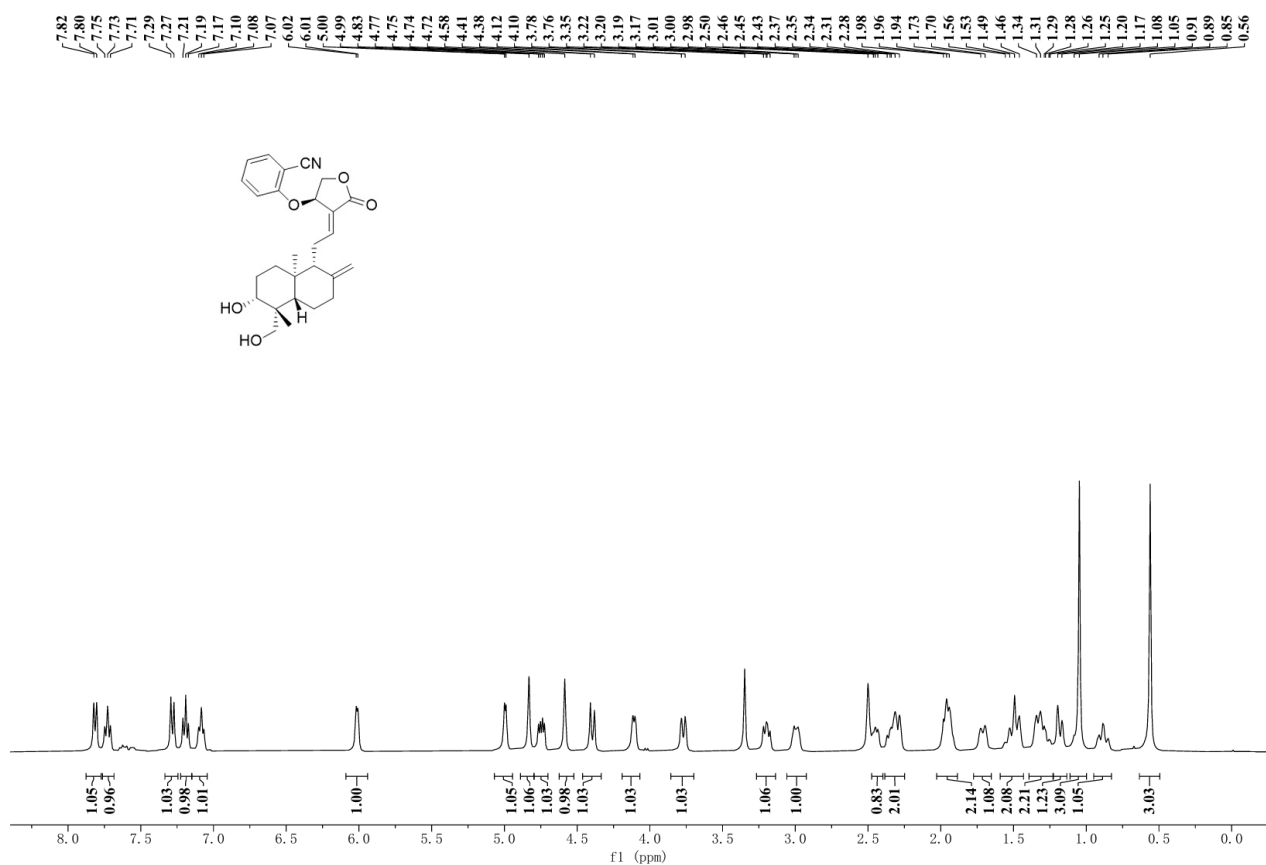


Figure S27 ¹H NMR spectrum of compound 4c (DMSO-*d*₆)

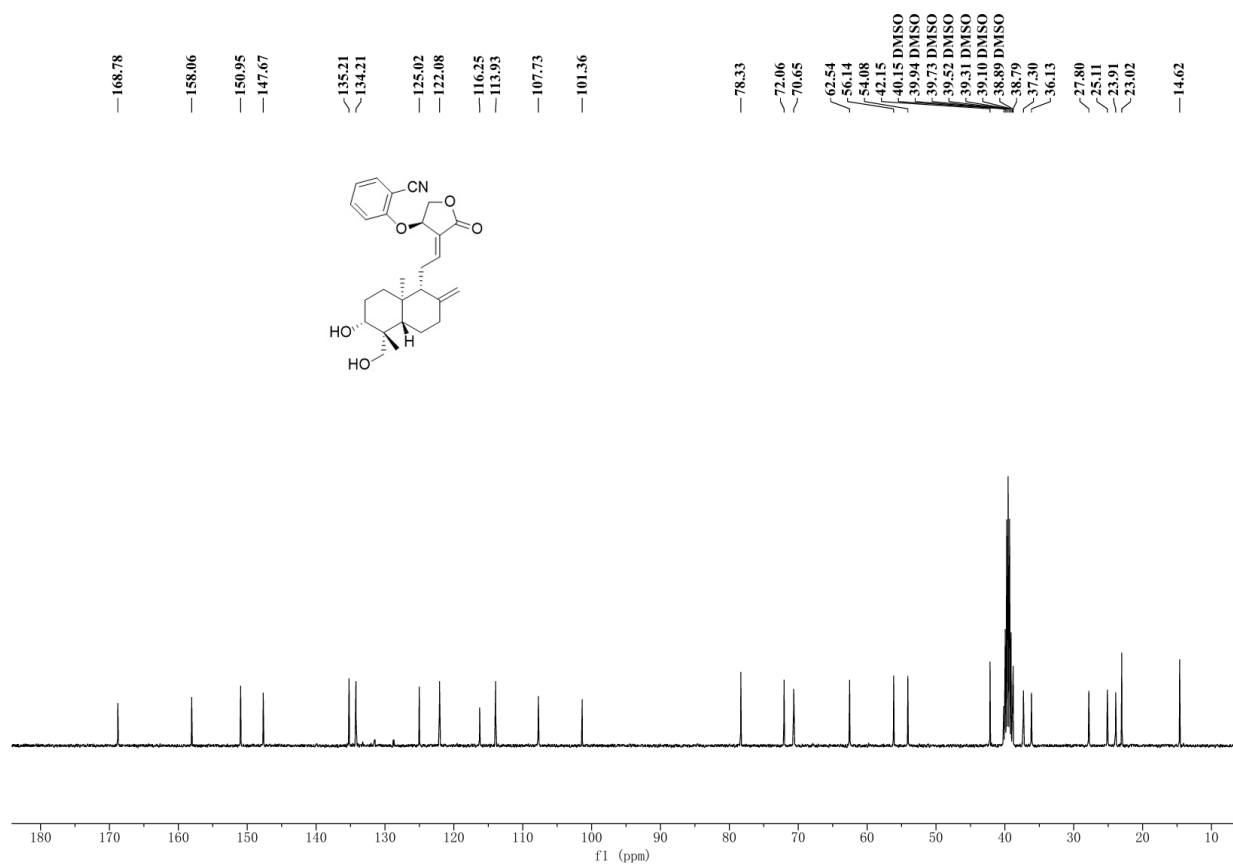


Figure S28 ¹³C NMR spectrum of compound 4c (DMSO-*d*₆)

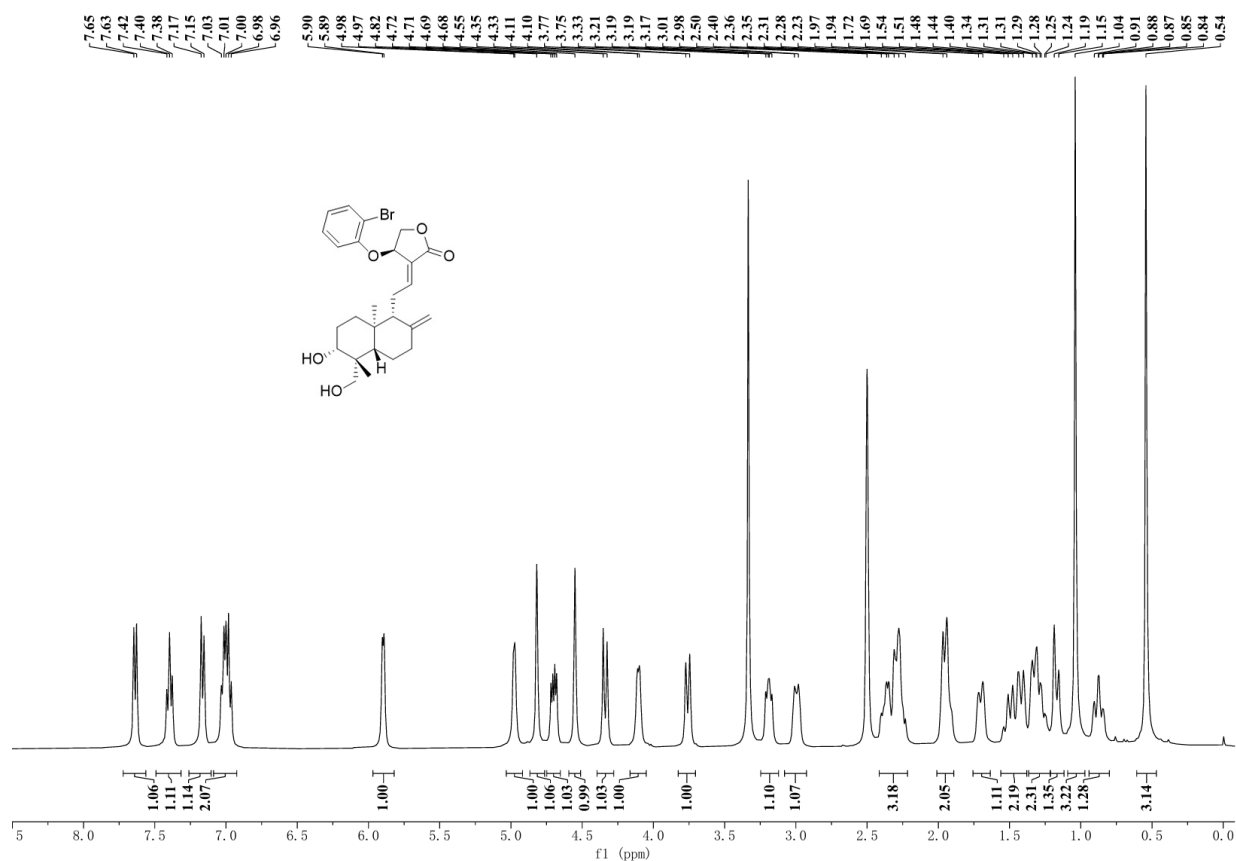


Figure S29 ¹H NMR spectrum of compound **4d** (DMSO-*d*₆)

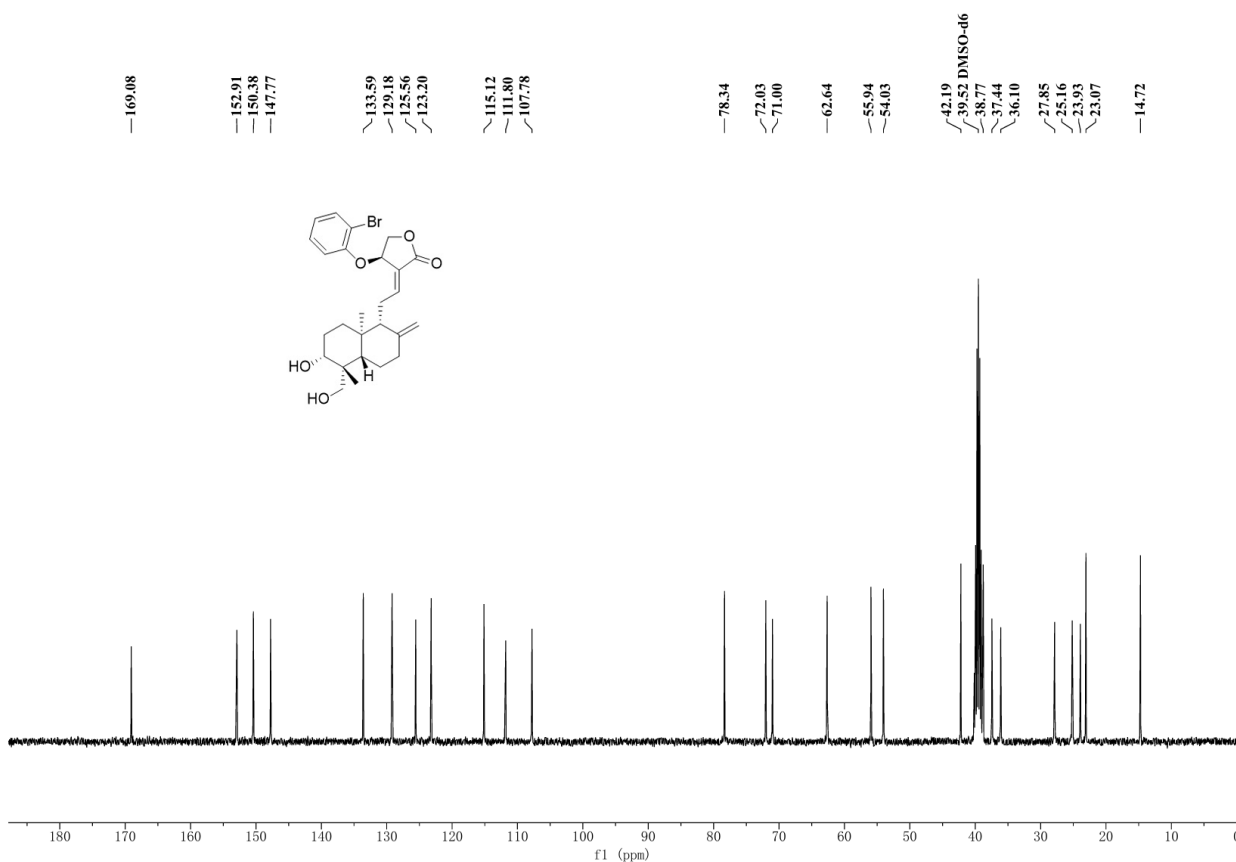


Figure S30 ¹³C NMR spectrum of compound **4d** (DMSO-*d*₆)

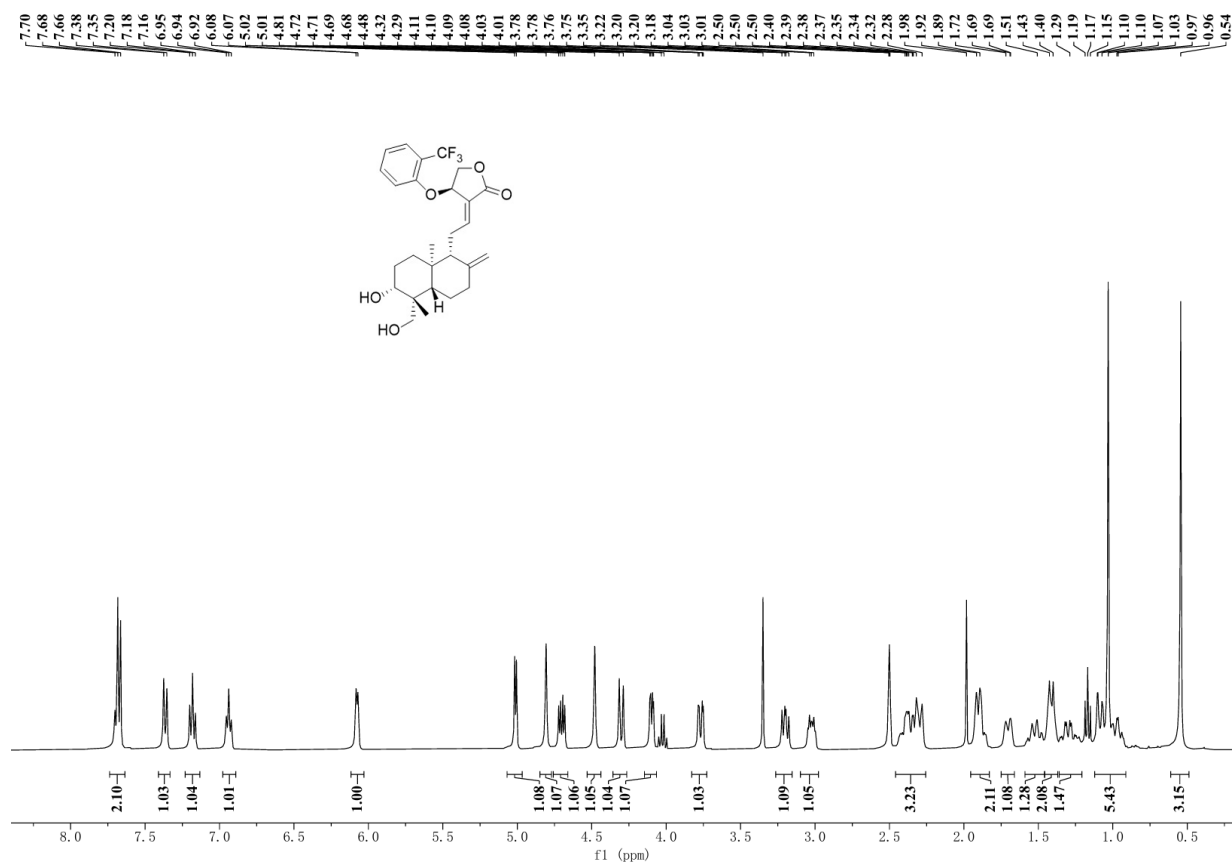


Figure S31 ¹H NMR spectrum of compound 4e (DMSO-*d*₆)

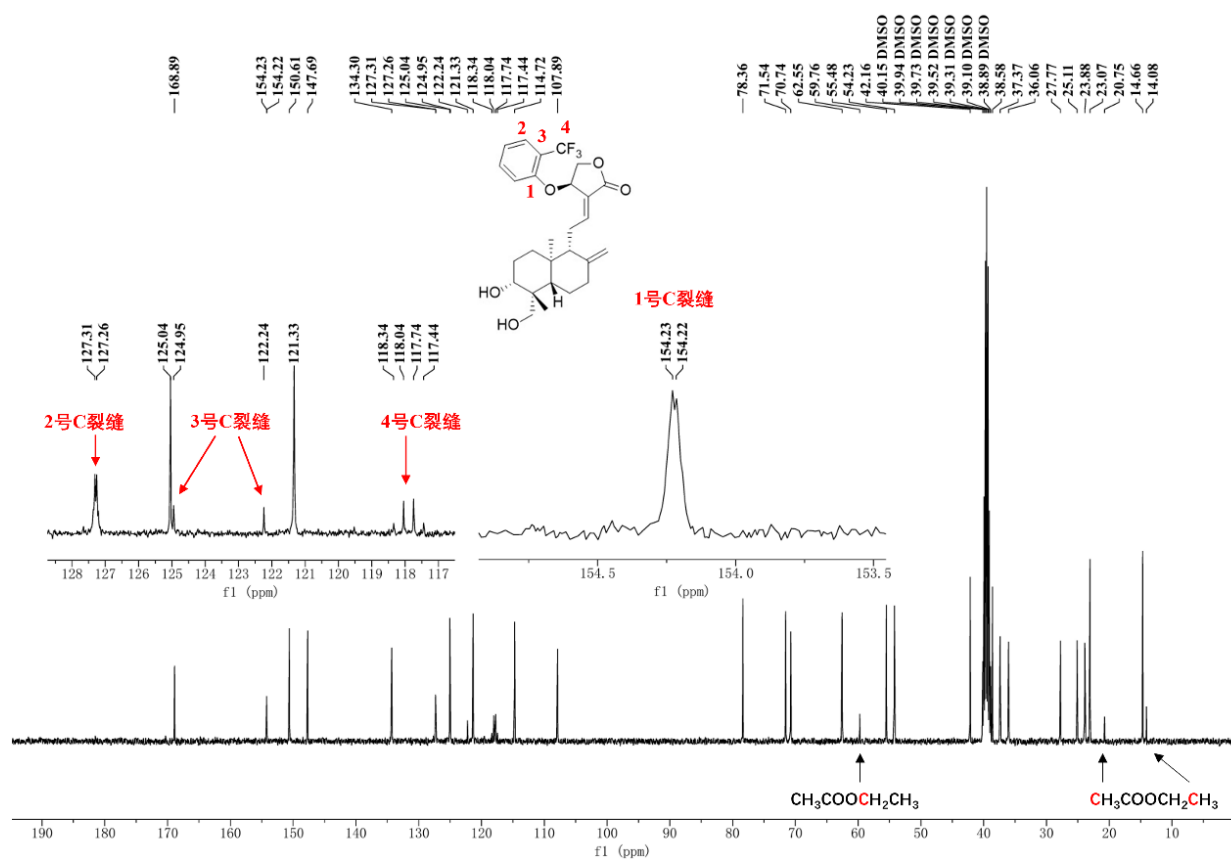


Figure S32 ¹³C NMR spectrum of compound 4e (DMSO-*d*₆)

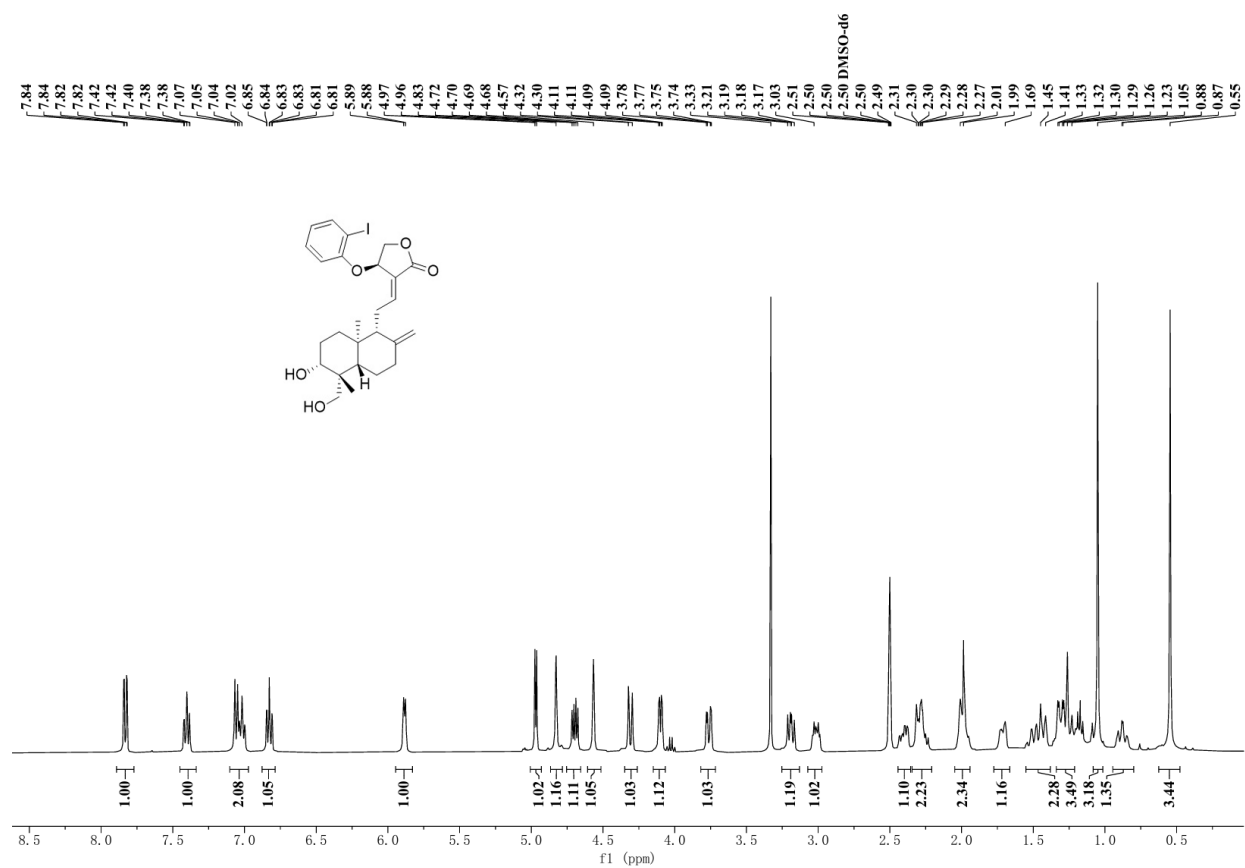


Figure S33 ^1H NMR spectrum of compound **4f** ($\text{DMSO}-d_6$)

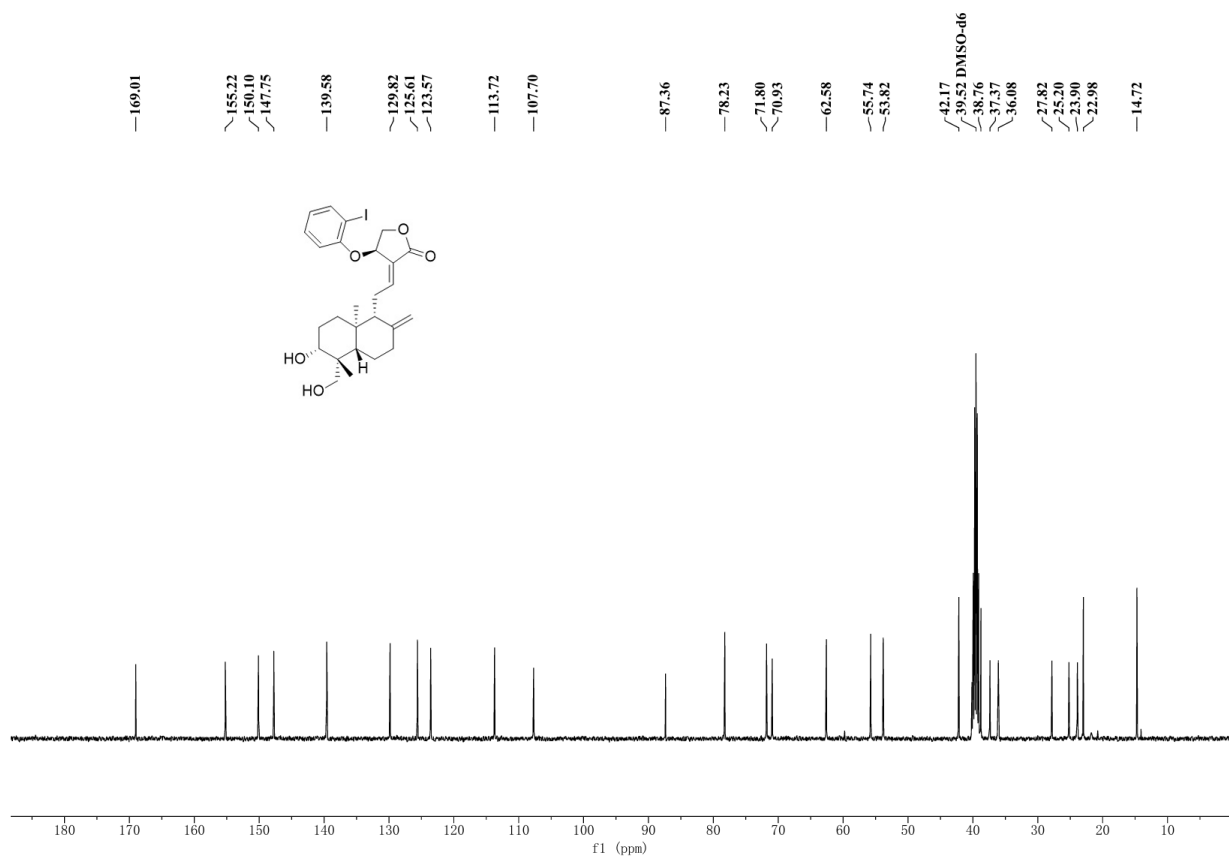


Figure S34 ^{13}C NMR spectrum of compound **4f** ($\text{DMSO}-d_6$)

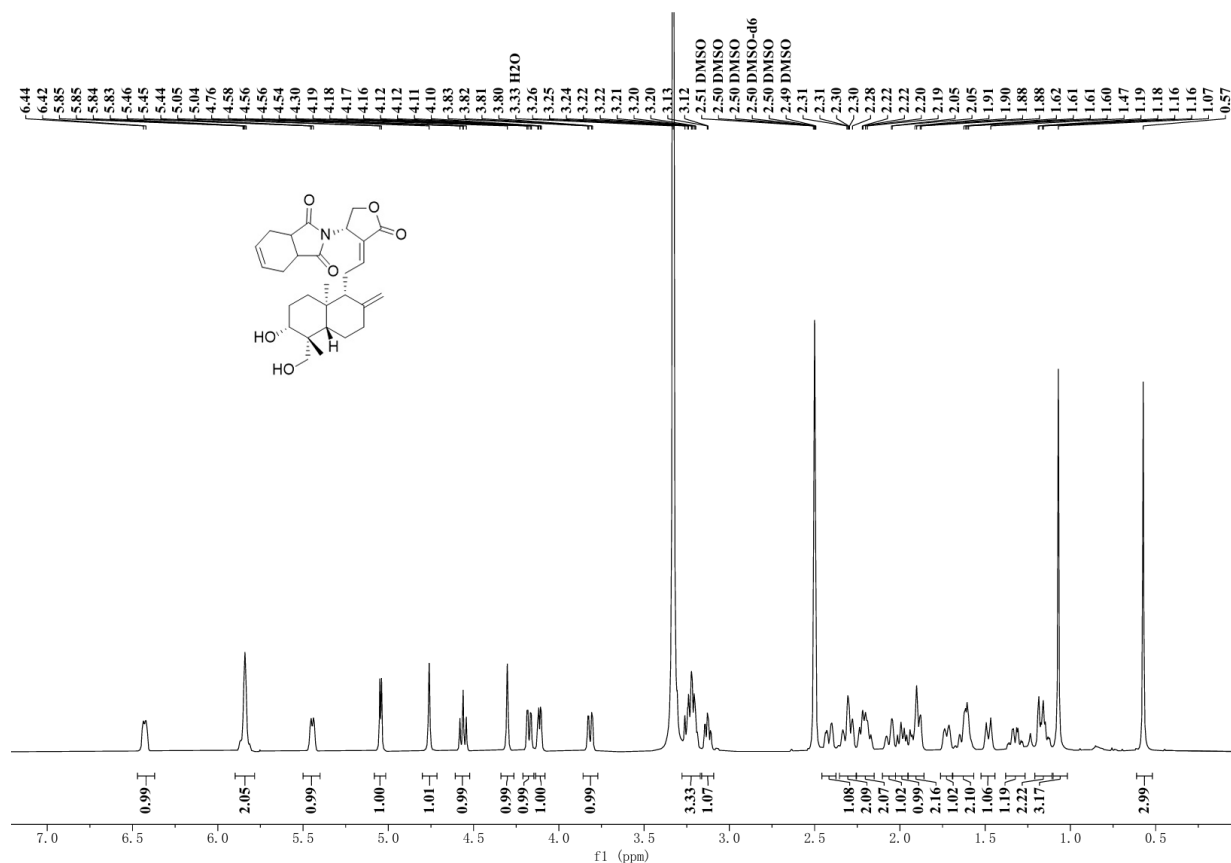


Figure S37 ¹H NMR spectrum of compound **4h** (DMSO-*d*₆)

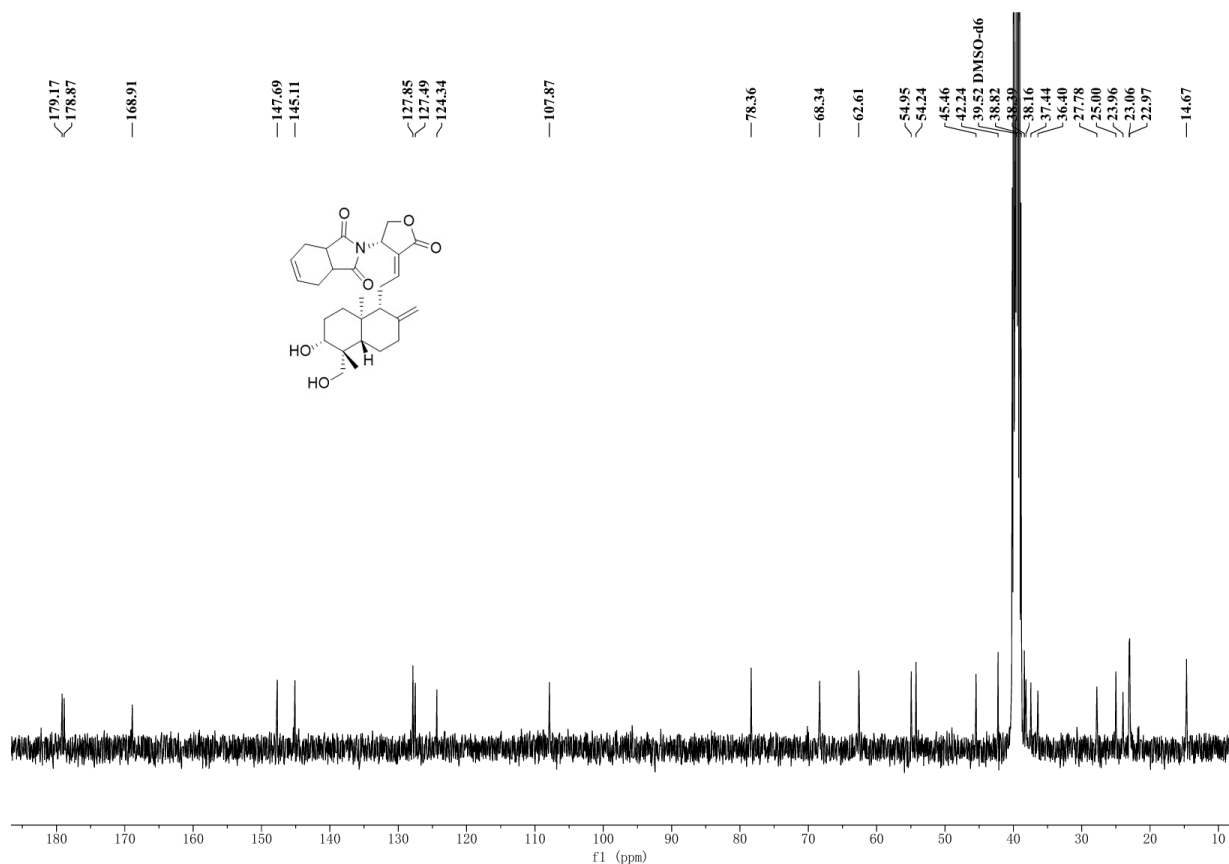


Figure S38 ¹³C NMR spectrum of compound **4h** (DMSO-*d*₆)

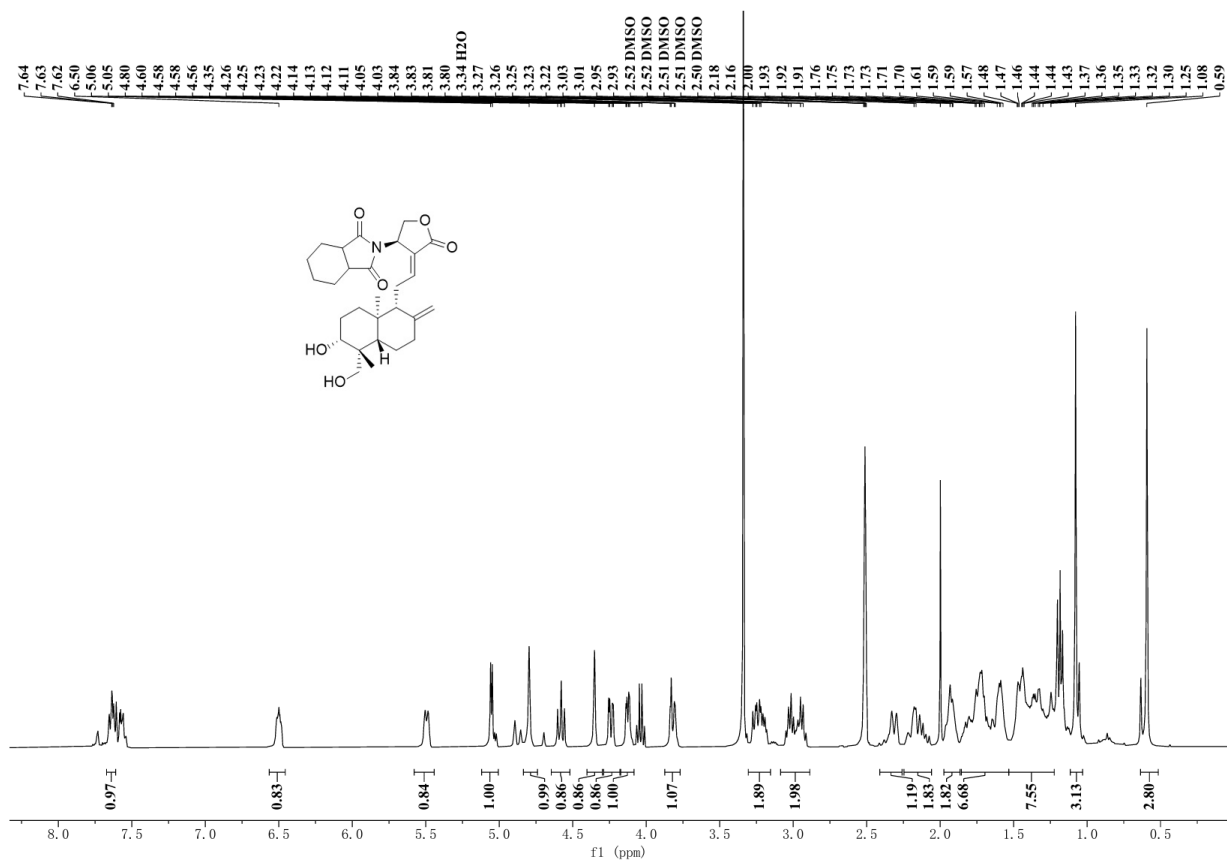


Figure S39 ¹H NMR spectrum of compound **4i** (DMSO-*d*₆)

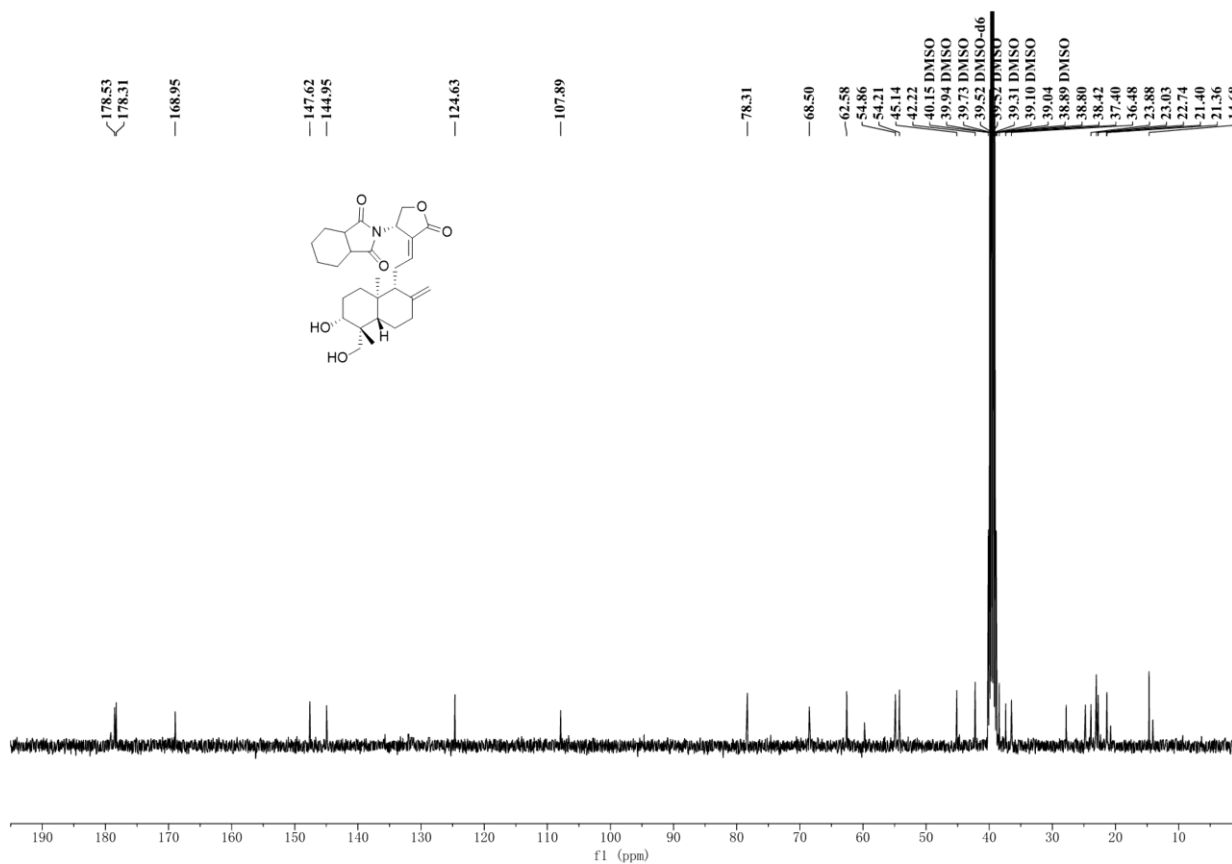


Figure S40 ¹³C NMR spectrum of compound **4i** (DMSO-*d*₆)

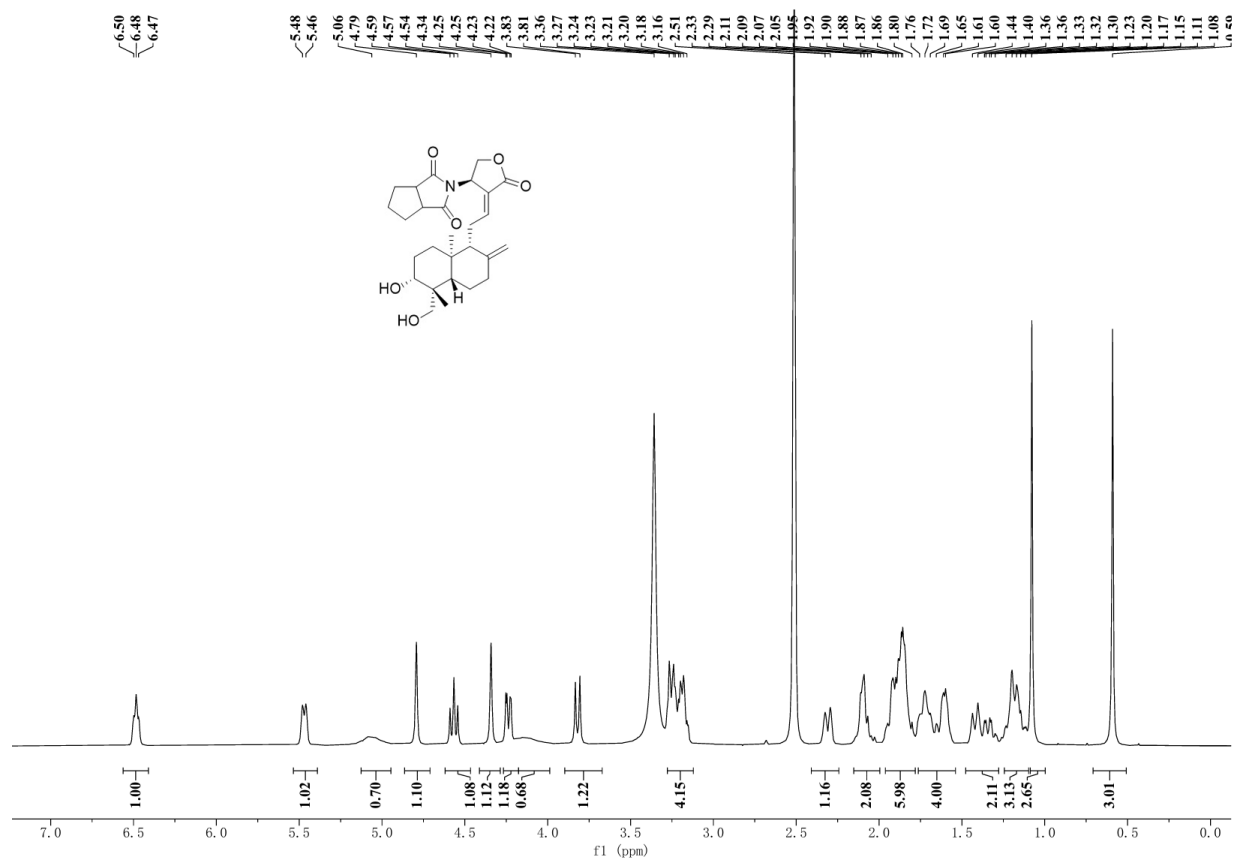


Figure S41 ¹H NMR spectrum of compound **4j** (DMSO-*d*₆)

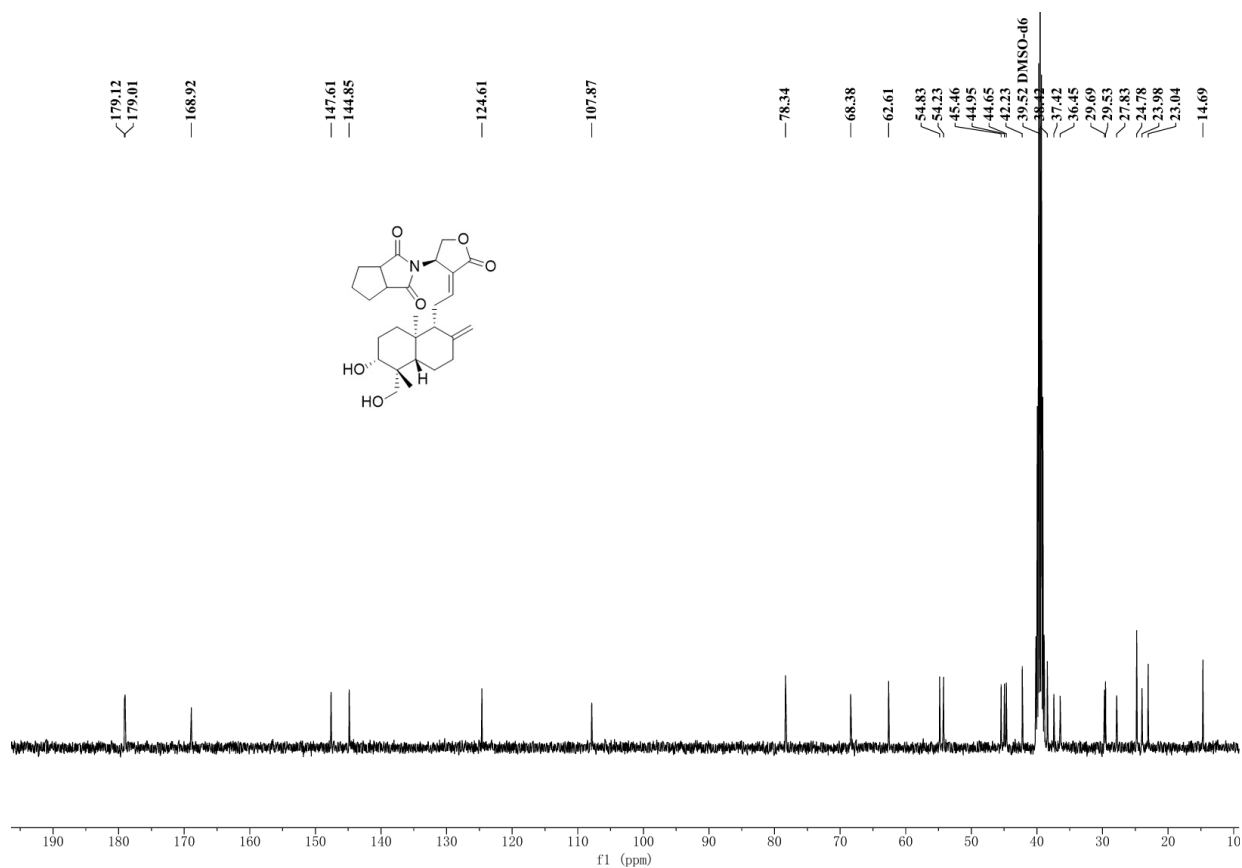


Figure S42 ¹³C NMR spectrum of compound **4j** (DMSO-*d*₆)

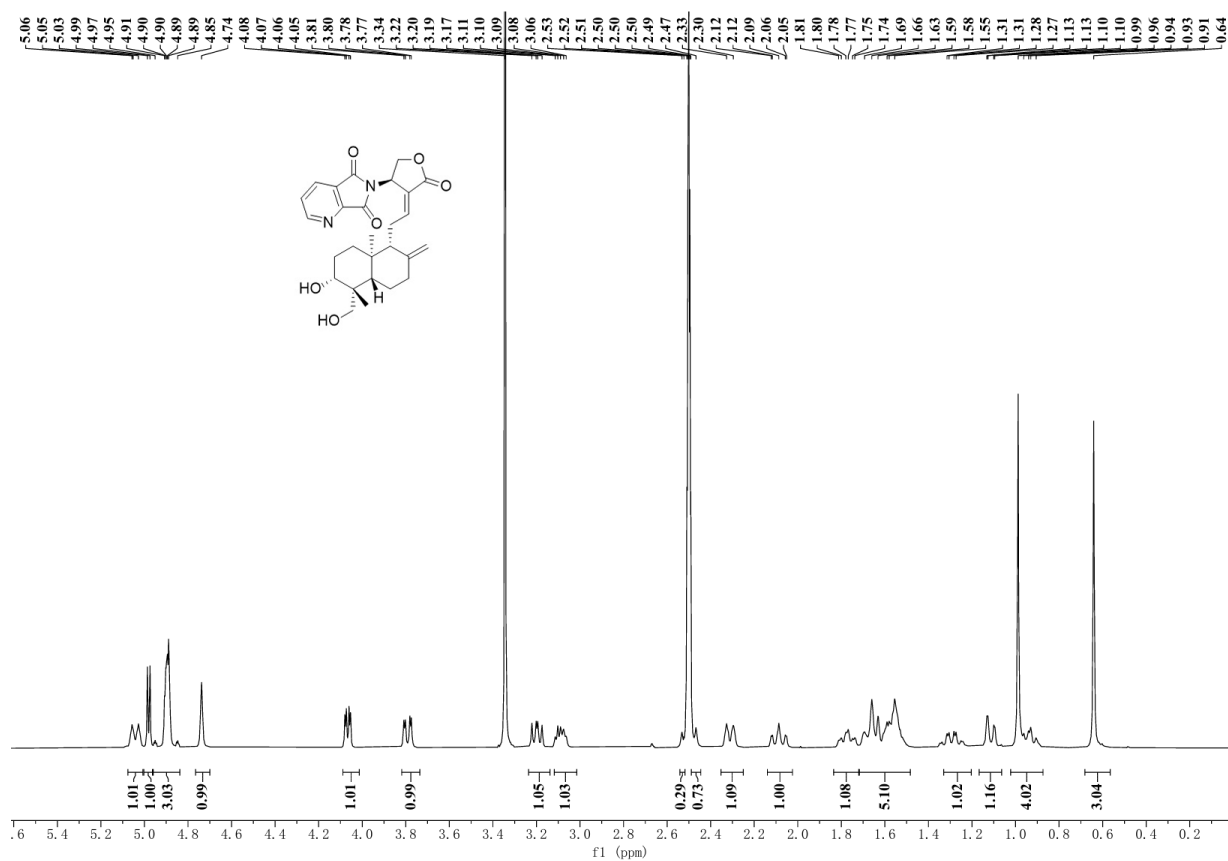


Figure S43 ^1H NMR spectrum of compound **4k** ($\text{DMSO-}d_6$)

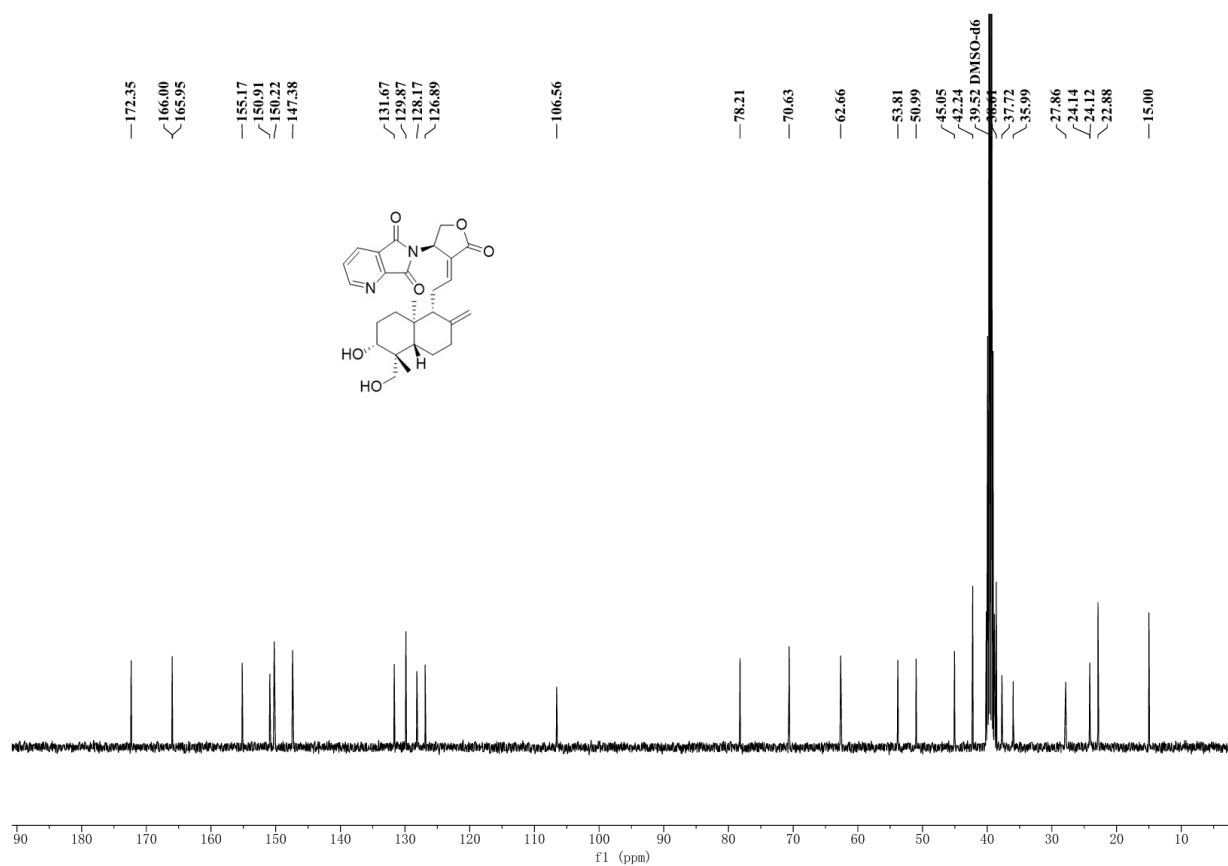


Figure S44 ^{13}C NMR spectrum of compound **4k** ($\text{DMSO}-d_6$)

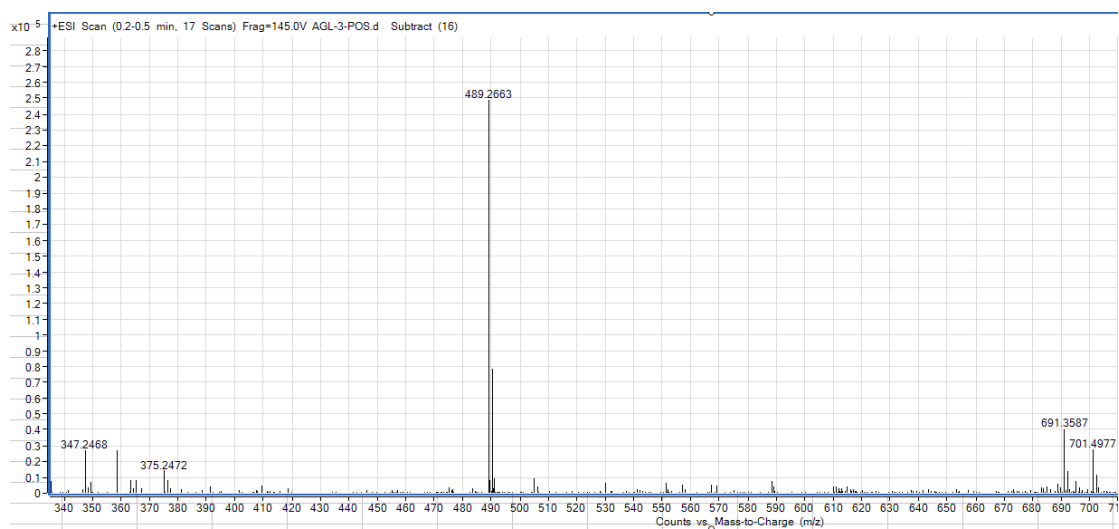


Figure S45 HRMS spectrum of compound **3a**

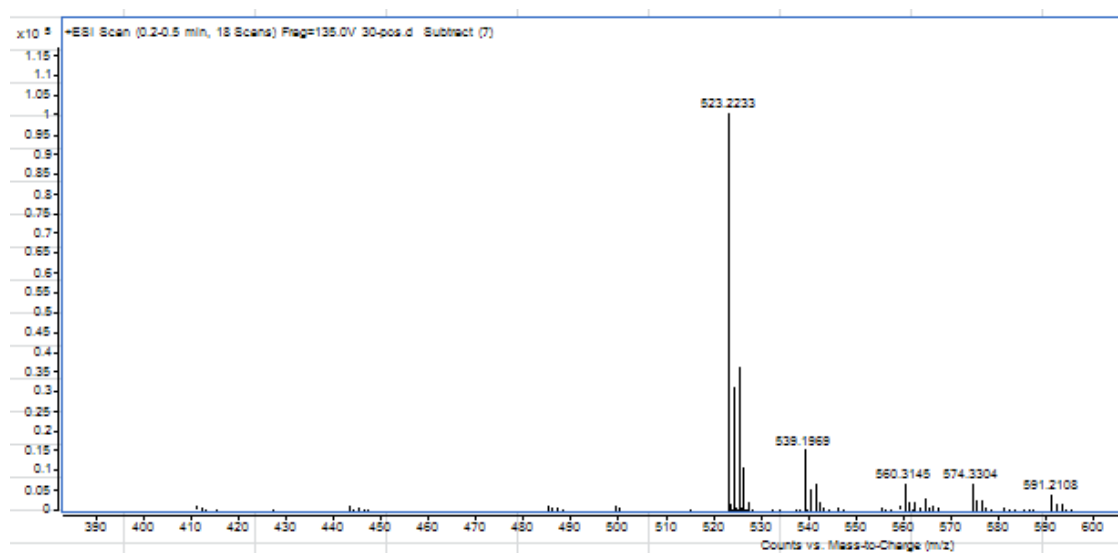


Figure S46 HRMS spectrum of compound **3b**

Aa-18 #23 RT: 0.21 AV: 1 SB: 1 0.00 NL: 2.21E8
T: FTMS + p ESI Full lock ms [100.0000-1000.0000]

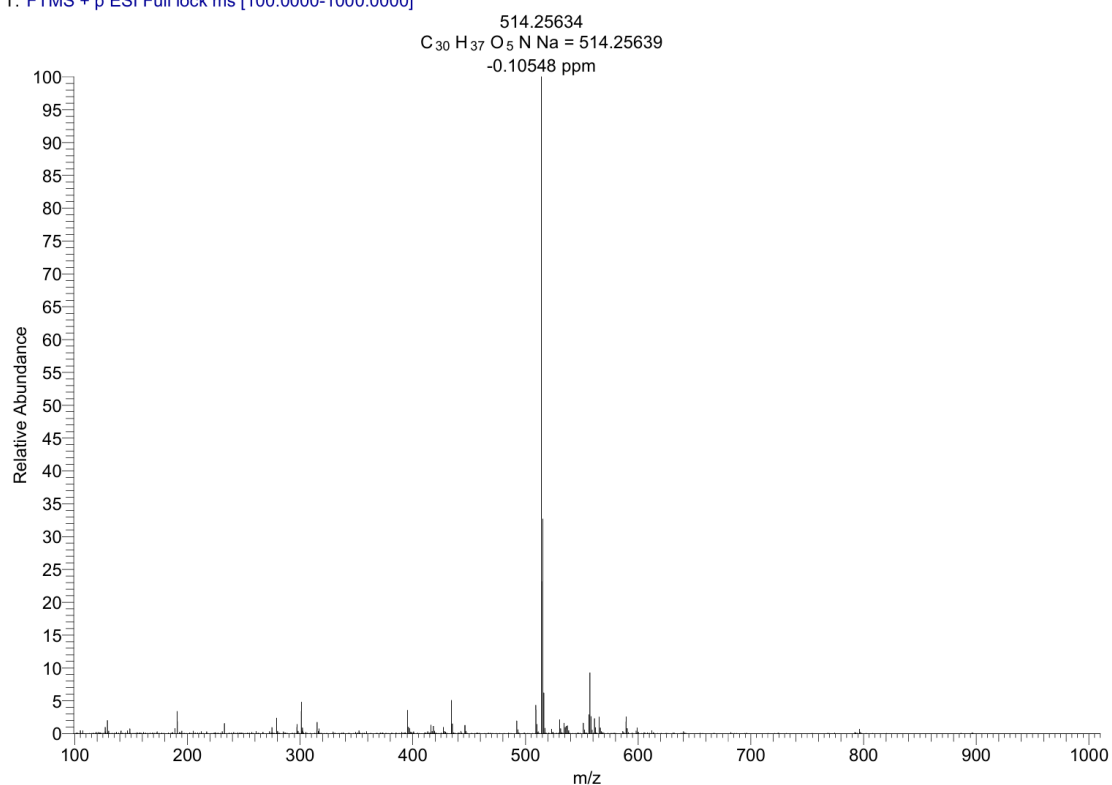


Figure S47 HRMS spectrum of compound 3c

A17 #21 RT: 0.20 AV: 1 SB: 1 0.00-0.01 NL: 8.80E7
T: FTMS + p ESI Full lock ms [100.0000-1000.0000]

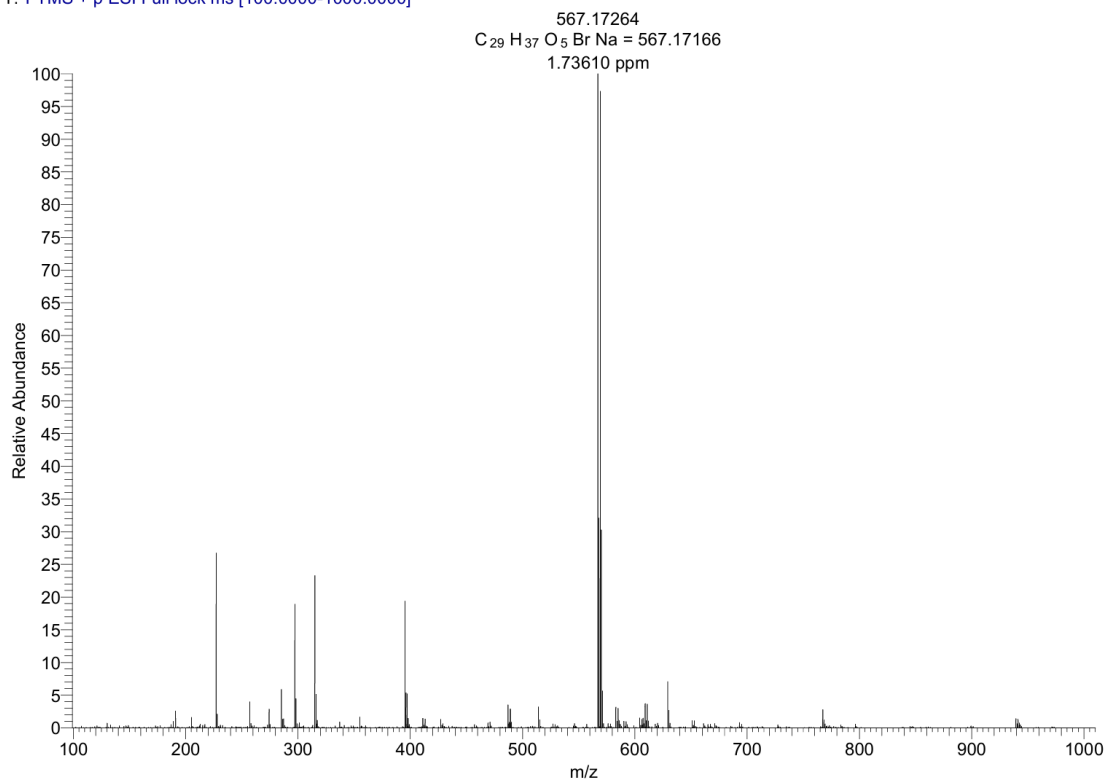


Figure S48 HRMS spectrum of compound 3d

Aa-20 #35 RT: 0.33 AV: 1 SB: 1 0.00-0.01 NL: 6.00E7
T: FTMS + p ESI Full lock ms [100.0000-1000.0000]

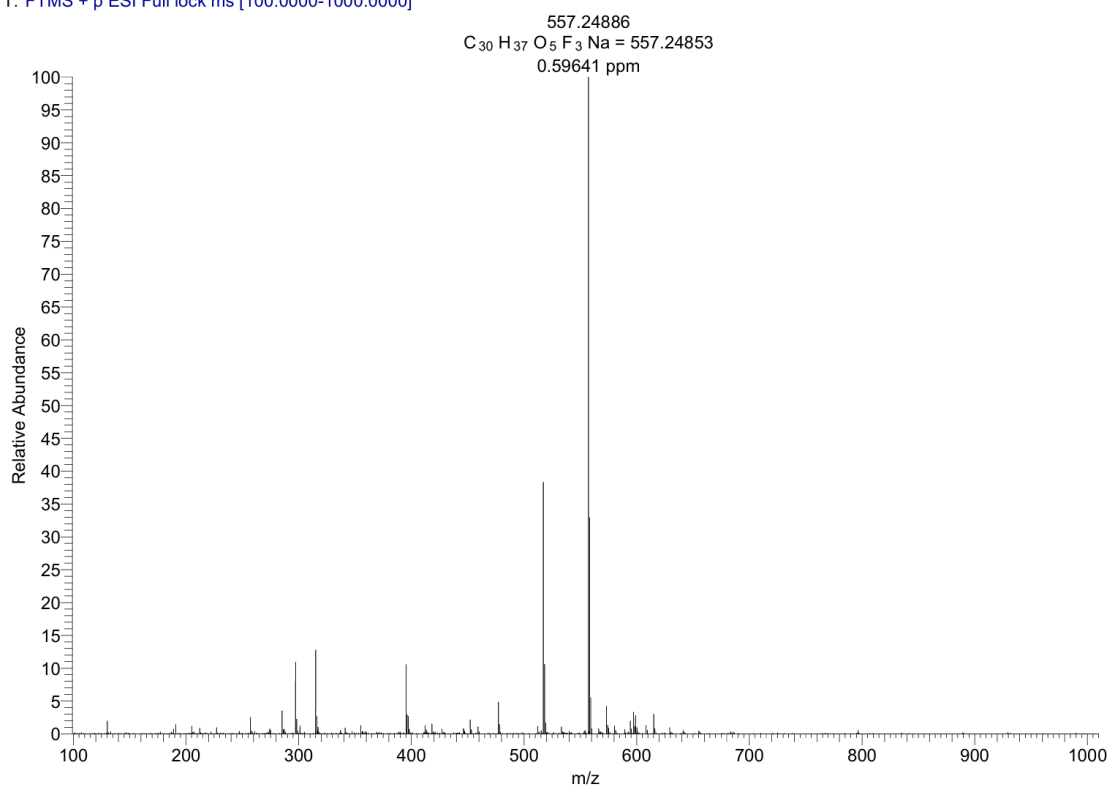


Figure S49 HRMS spectrum of compound 3e

A19 #21 RT: 0.20 AV: 1 SB: 1 0.00-0.01 NL: 6.52E7
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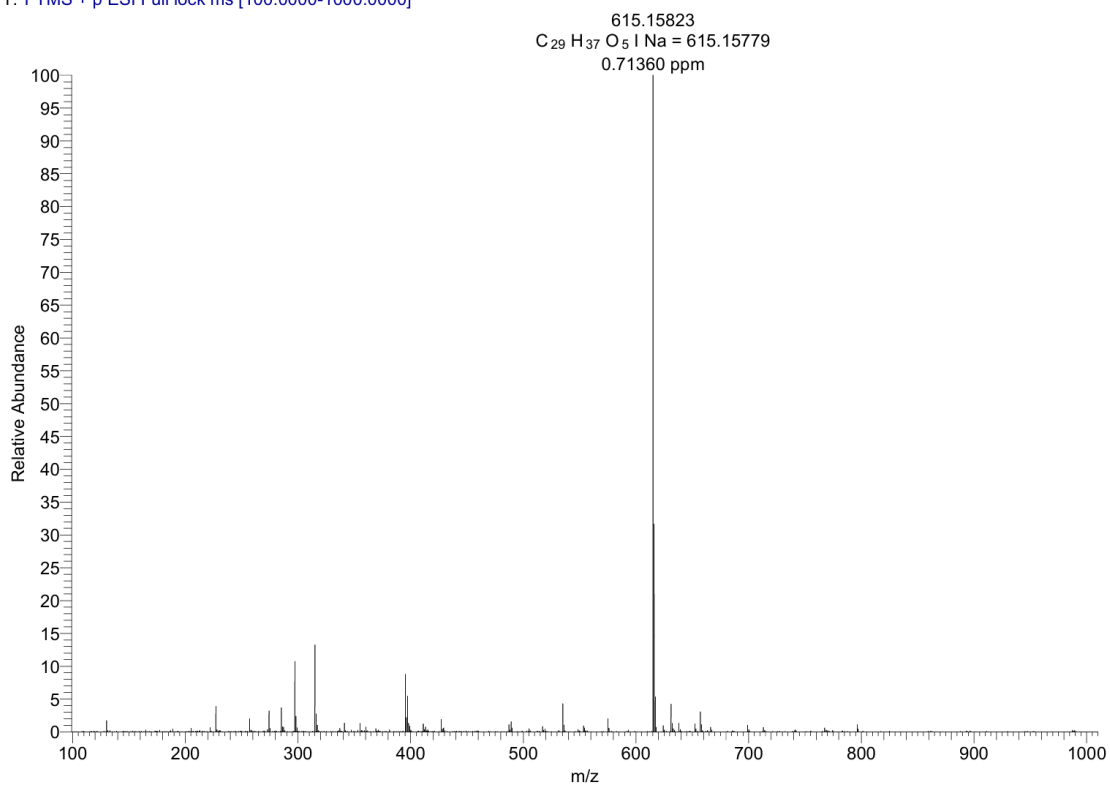


Figure S50 HRMS spectrum of compound 3f

Aa-28 #31 RT: 0.29 AV: 1 SB: 1 0.00-0.01 NL: 6.56E7
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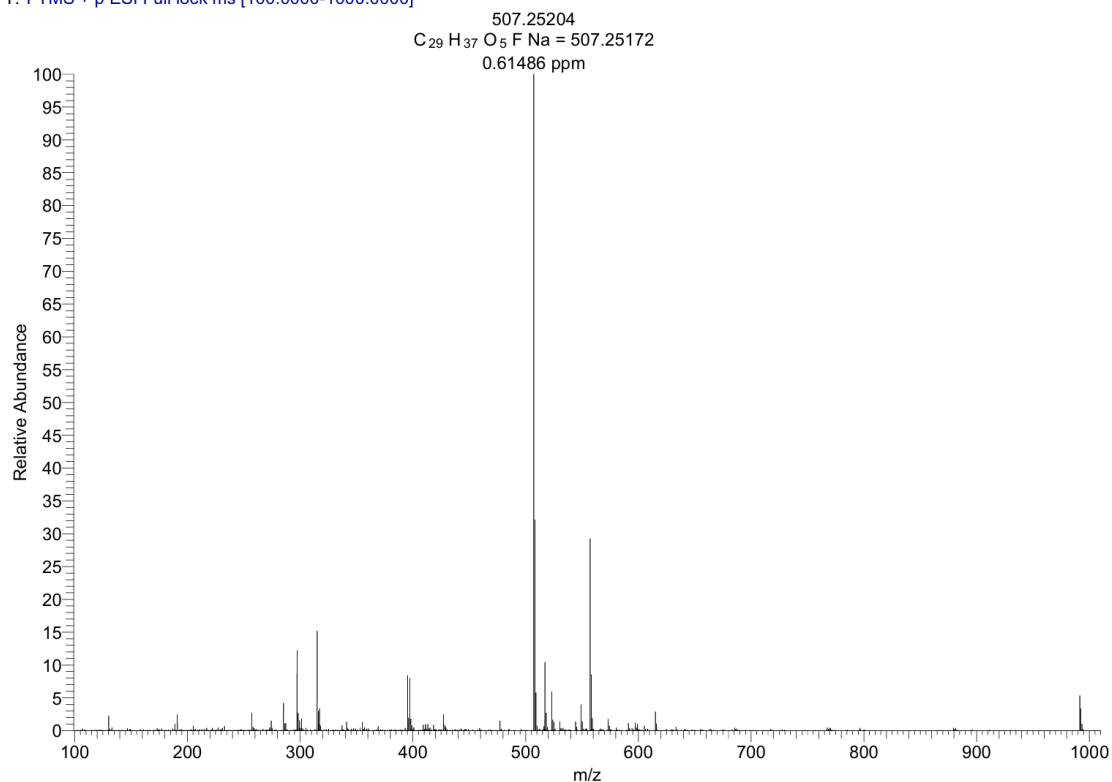


Figure S51 HRMS spectrum of compound **3g**

1-Aa-24 #9-34 RT: 0.08-0.32 AV: 26 NL: 1.28E8
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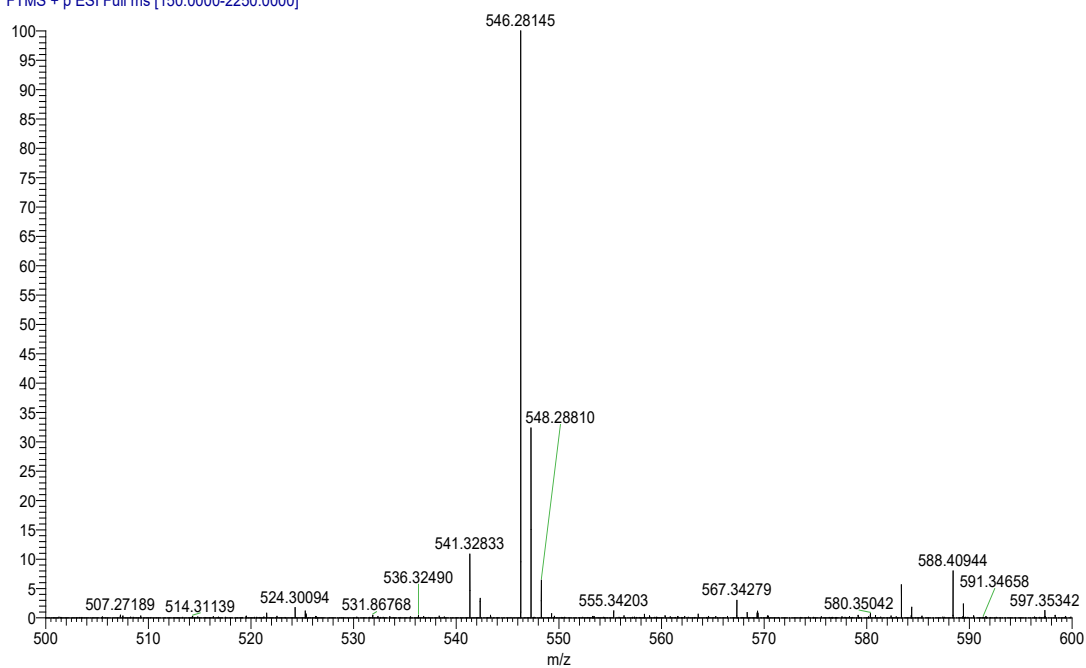


Figure S52 HRMS spectrum of compound **3h**

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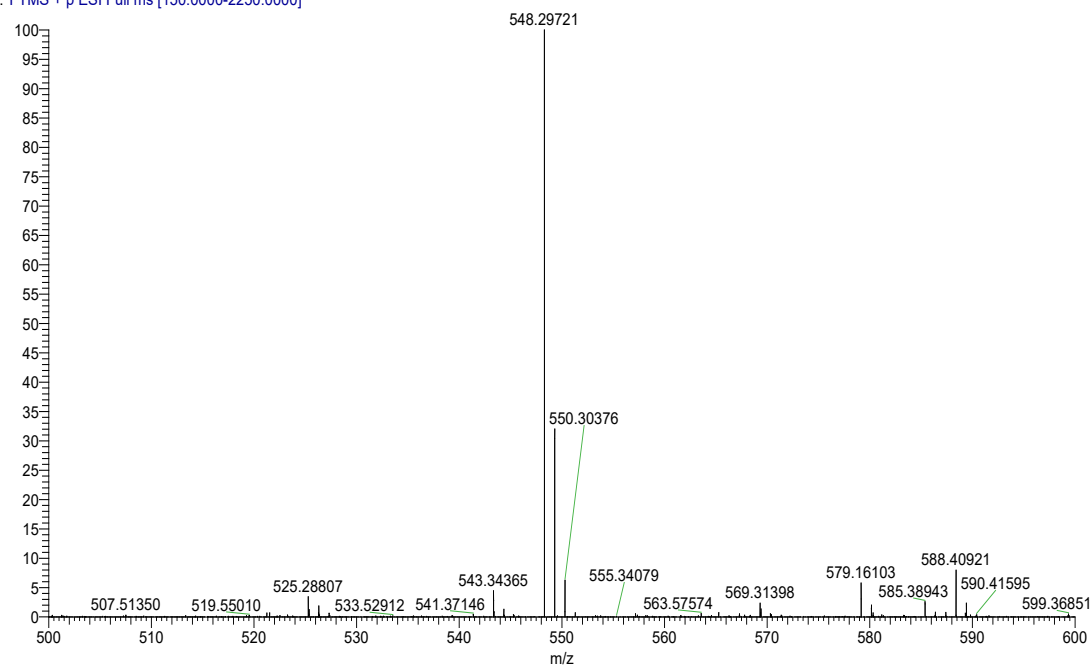


Figure S53 HRMS spectrum of compound 3i

AGLZ-16 #21 RT: 0.19 AV: 1 SB: 1 0.00 NL: 1.34E8
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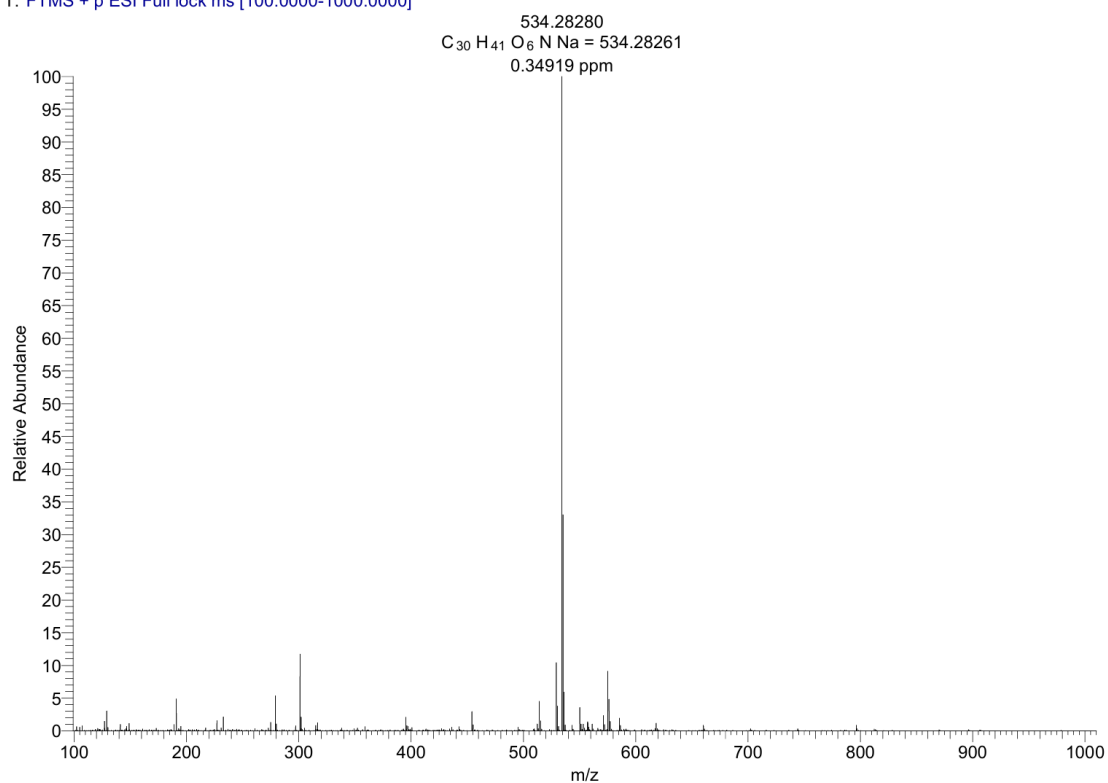


Figure S54 HRMS spectrum of compound 3j

AGLZ-10 #27 RT: 0.25 AV: 1 SB: 1 0.00 NL: 3.27E6
T: FTMS + p ESI Full lock ms [100.0000-1000.0000]

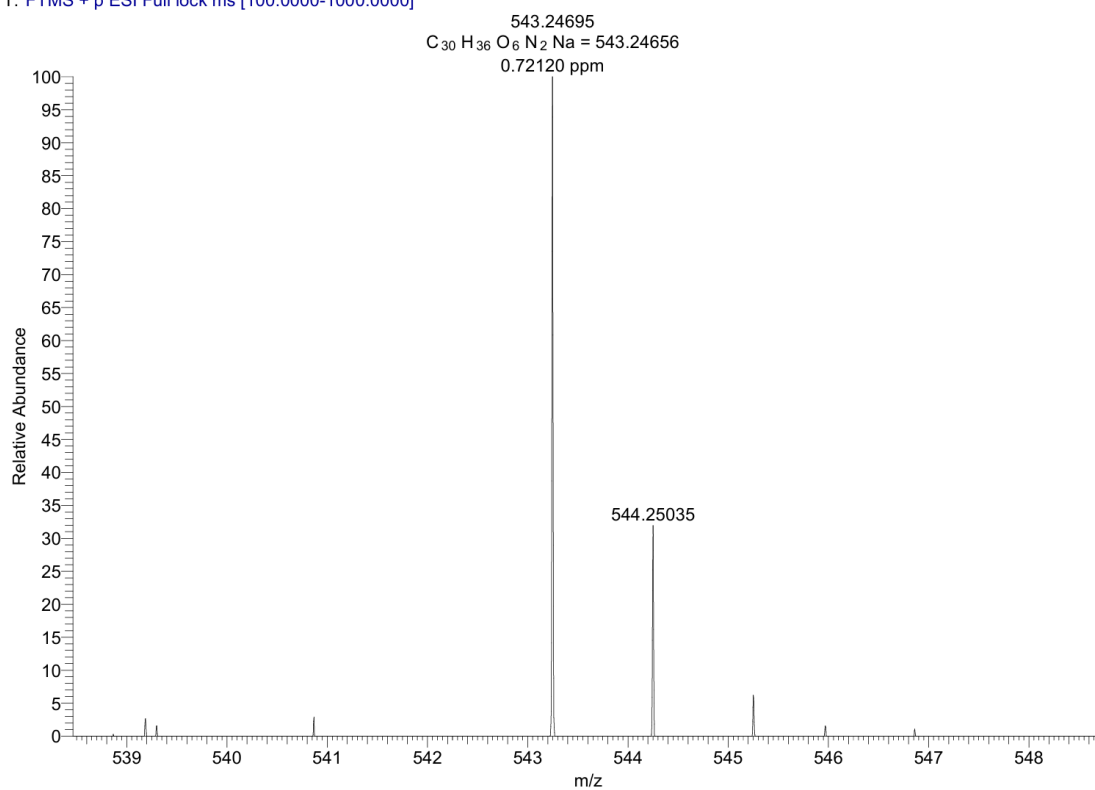


Figure S55 HRMS spectrum of compound 3k

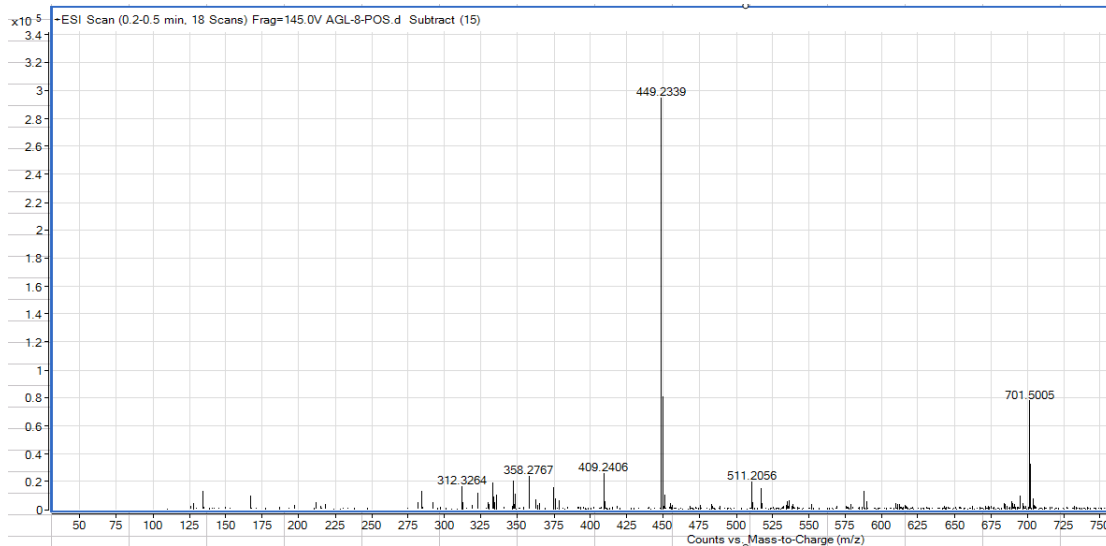


Figure S56 HRMS spectrum of compound 4a

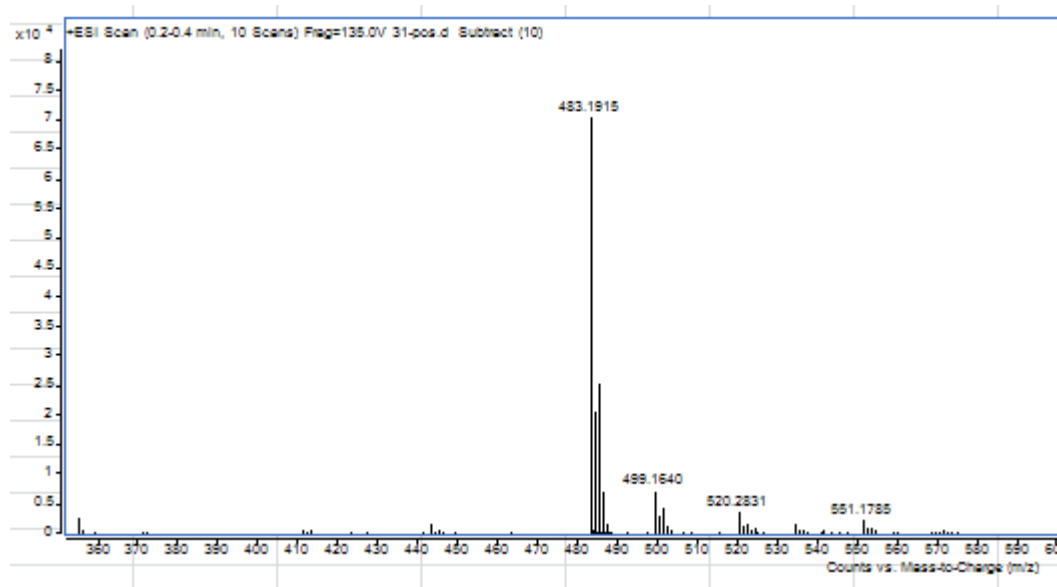


Figure S57 HRMS spectrum of compound 4b

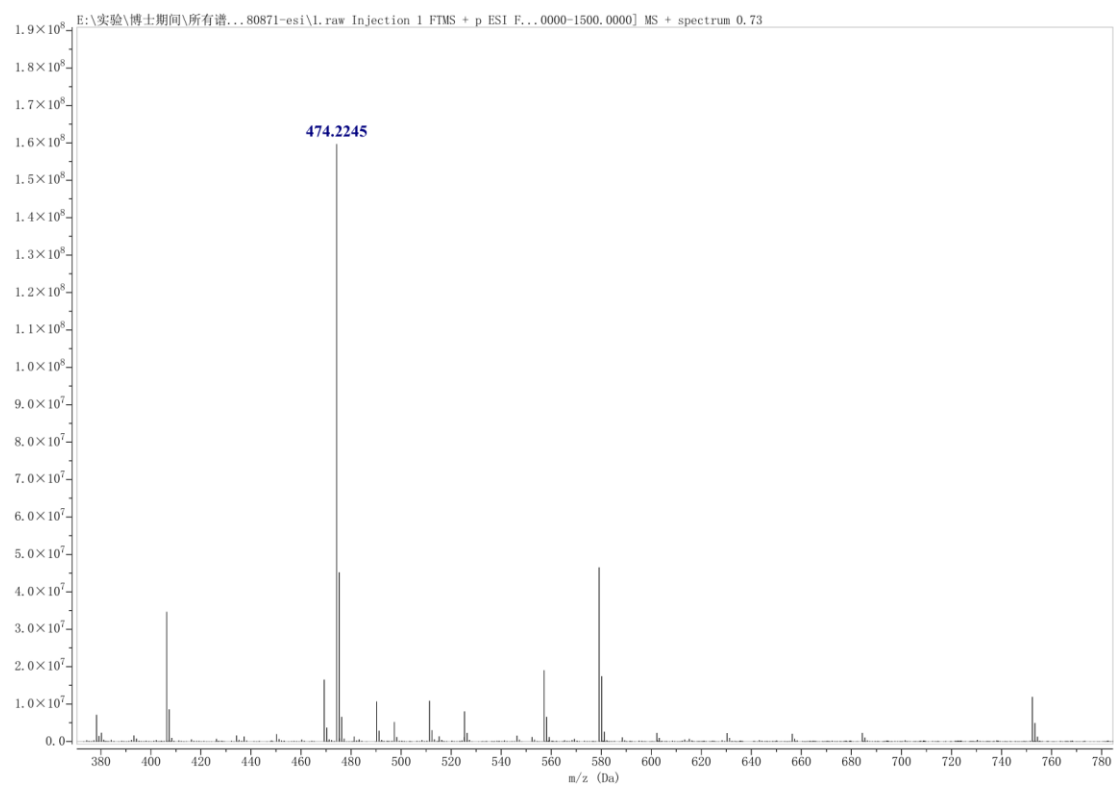
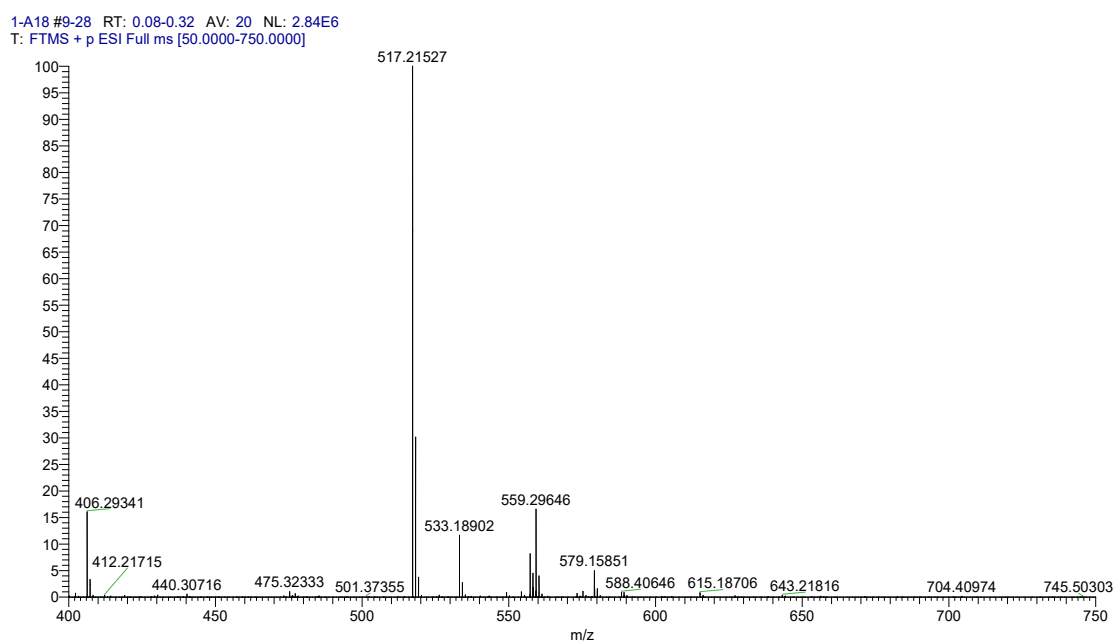
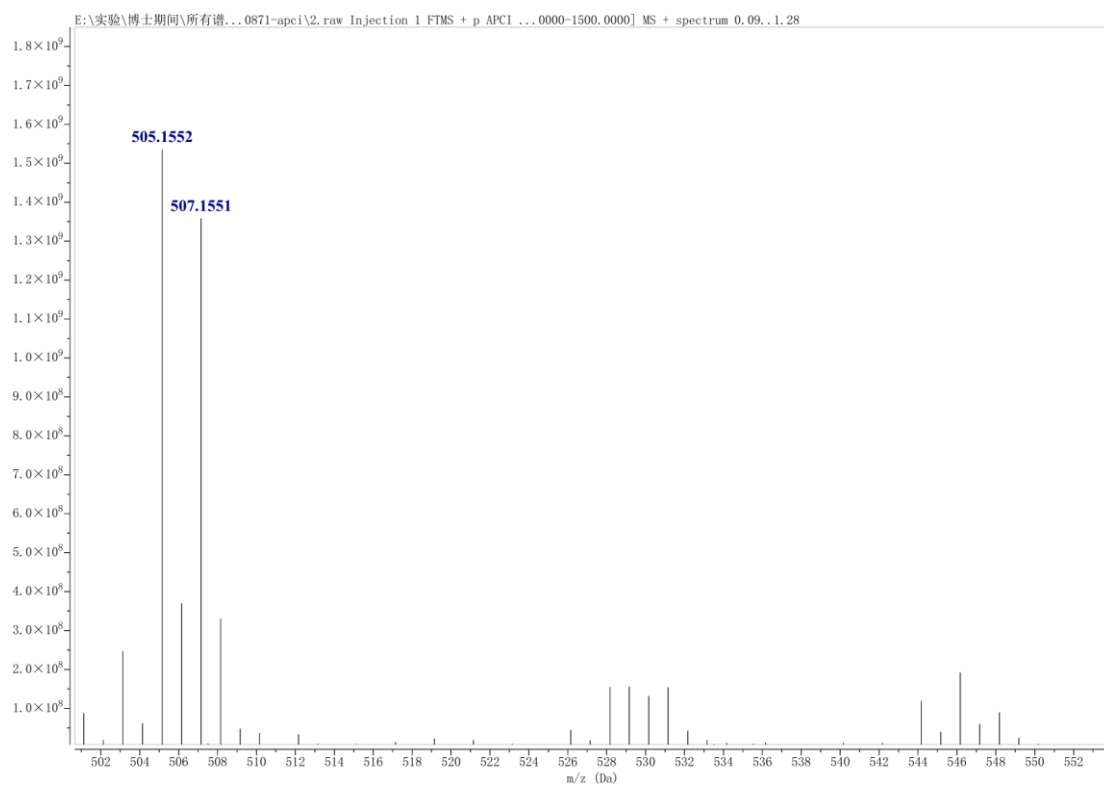


Figure S58 HRMS spectrum of compound 4c



Ab-27_20241218201507 #43 RT: 0.40 AV: 1 SB: 1 0.00 NL: 1.58E8
T: FTMS + p ESI Full lock ms [100.0000-1000.0000]

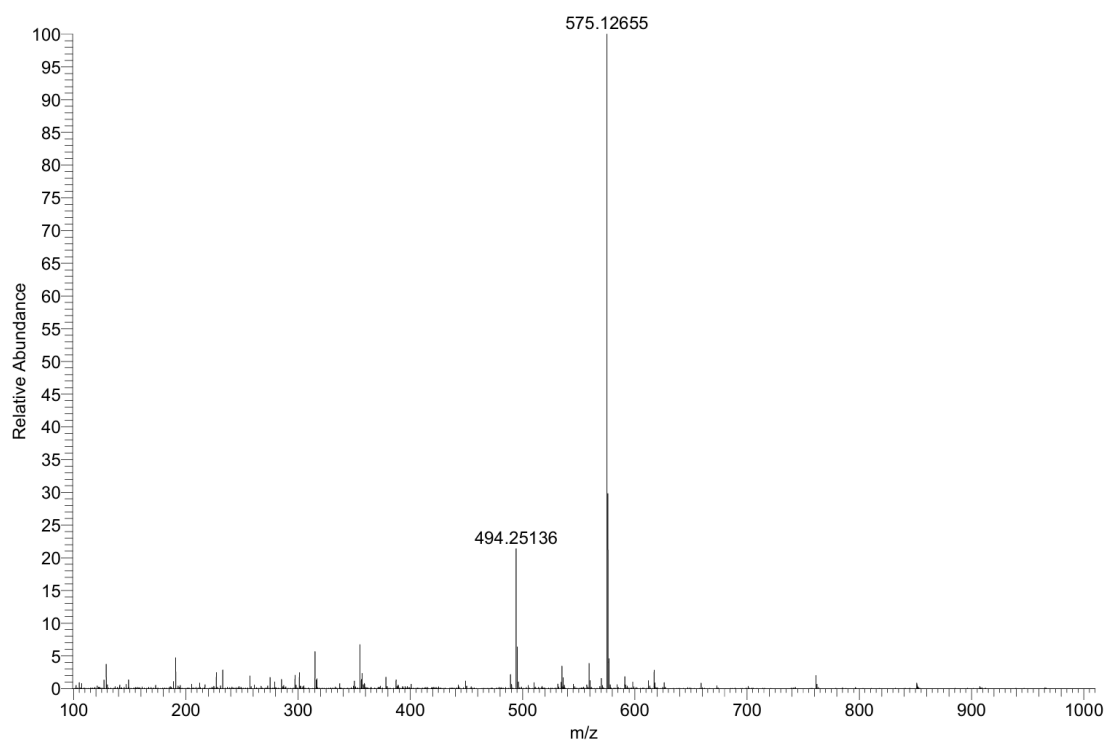


Figure S61 HRMS spectrum of compound 4f

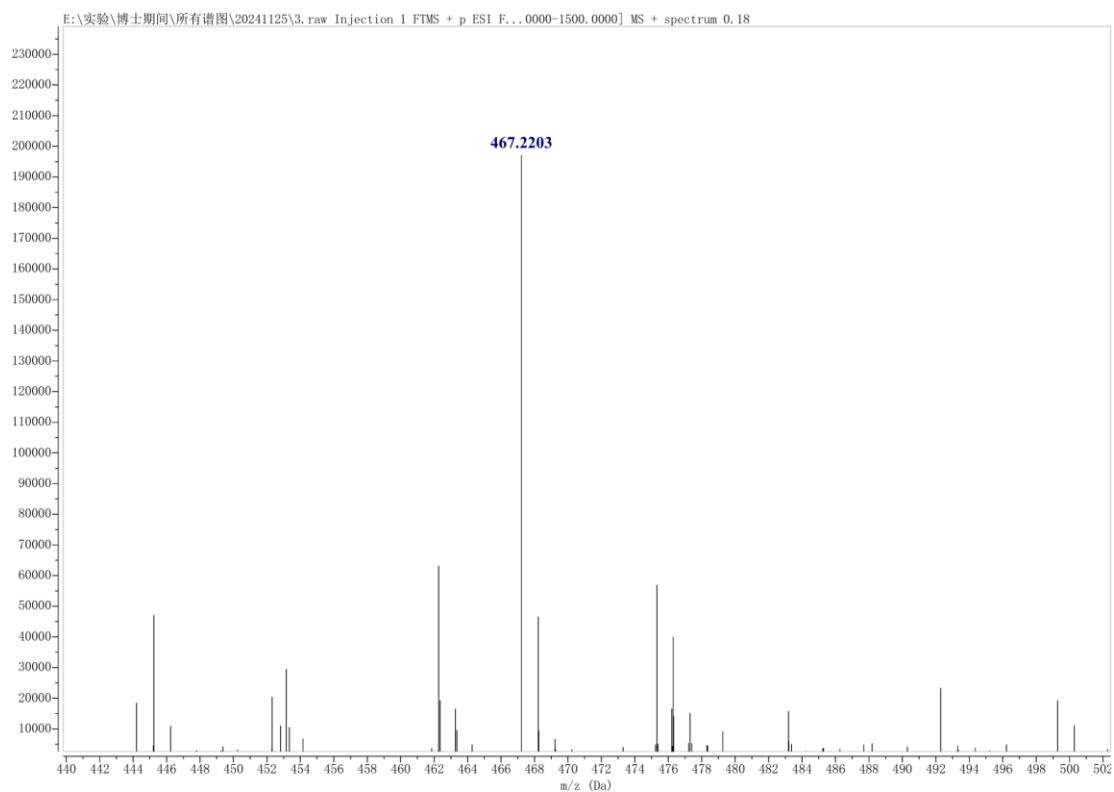


Figure S62 HRMS spectrum of compound 4g

2-Ab-24 #9-34 RT: 0.08-0.32 AV: 26 NL: 1.35E8
T: FTMS + p ESI Full ms [150.0000-2250.0000]

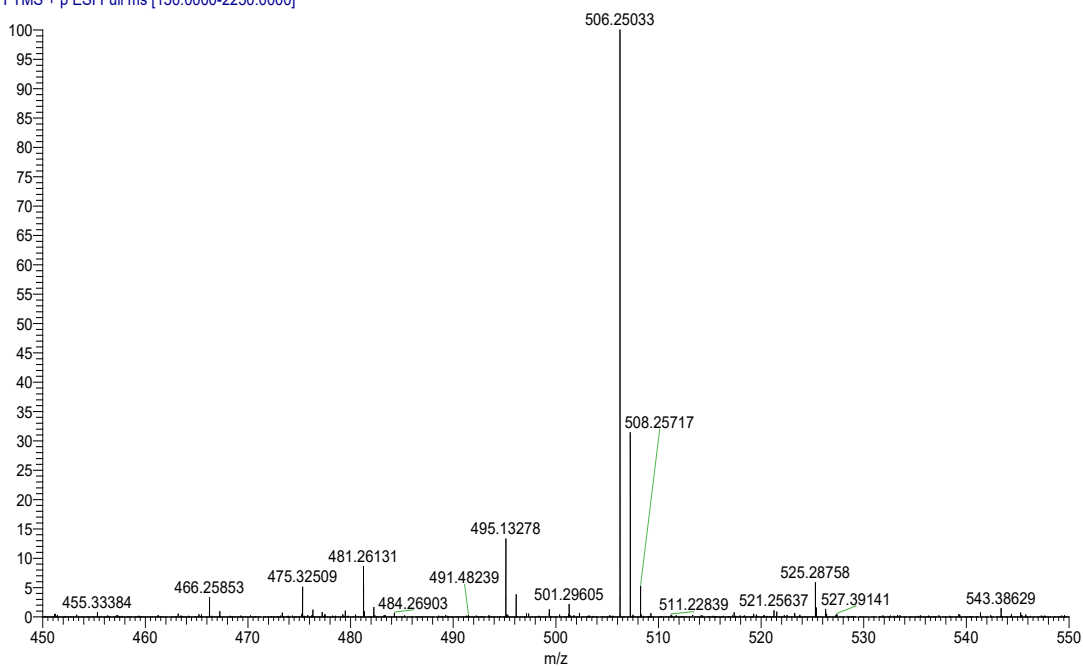


Figure S63 HRMS spectrum of compound 4h

4-Ab-25 #9-34 RT: 0.08-0.32 AV: 26 NL: 1.33E8
T: FTMS + p ESI Full ms [150.0000-2250.0000]

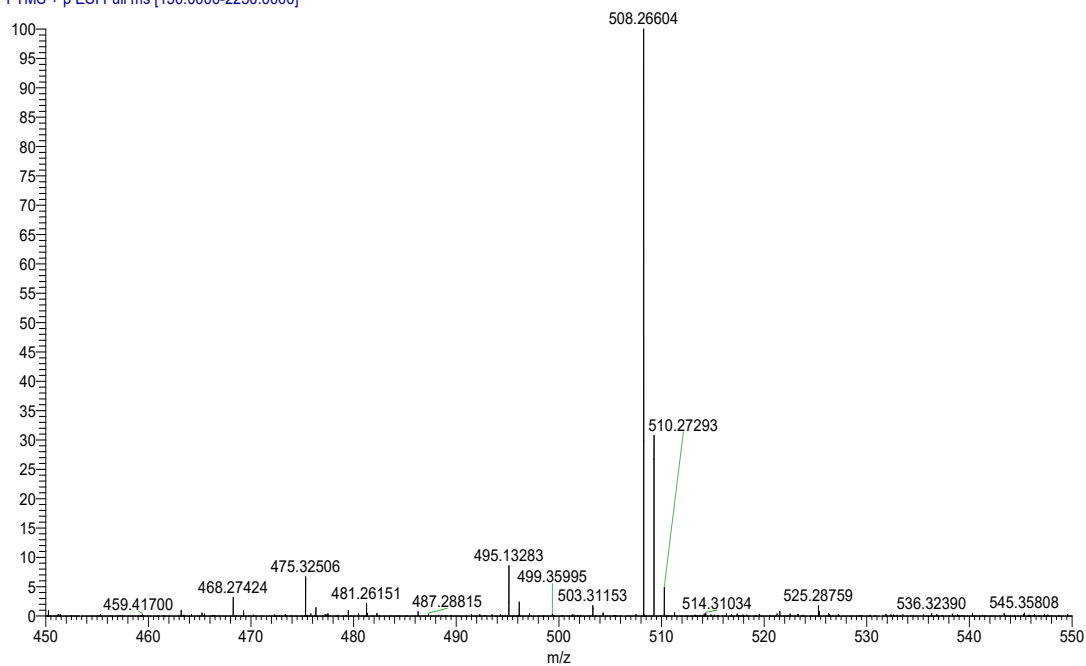


Figure S64 HRMS spectrum of compound 4i

AGLZ-17_20241218203130 #21 RT: 0.19 AV: 1 SB: 1 0.00 NL: 2.82E8
T: FTMS + p ESI Full lock ms [100.0000-1000.0000]

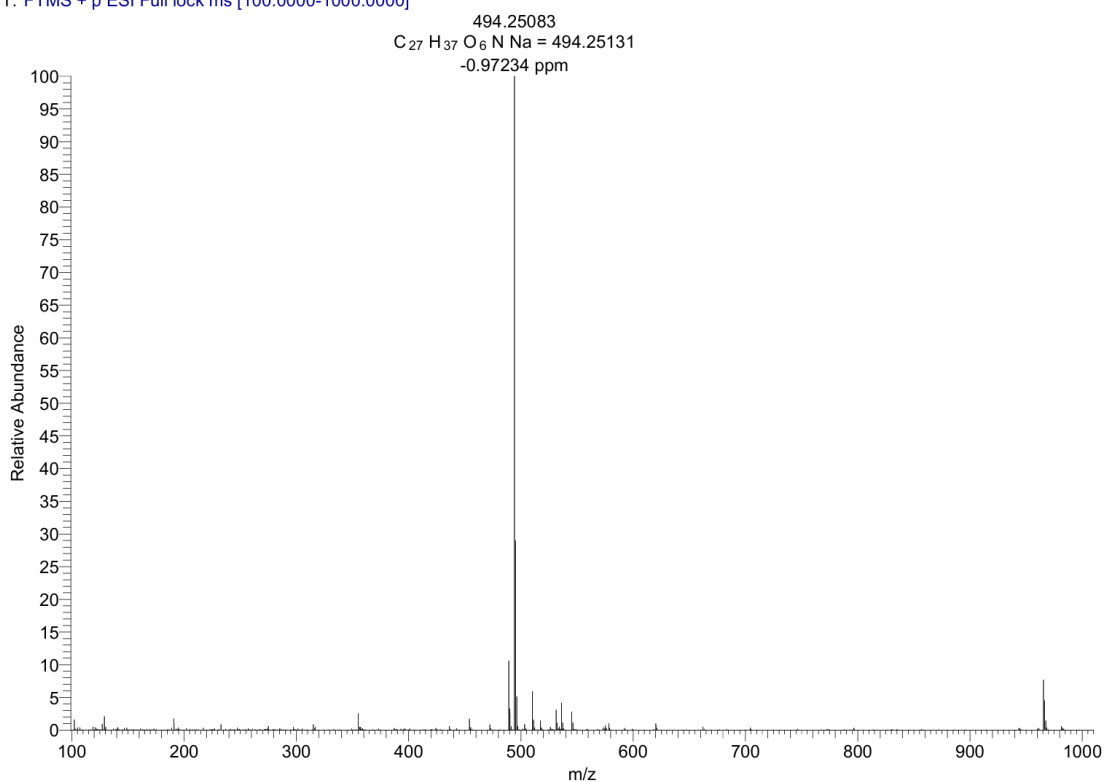


Figure S65 HRMS spectrum of compound 4j

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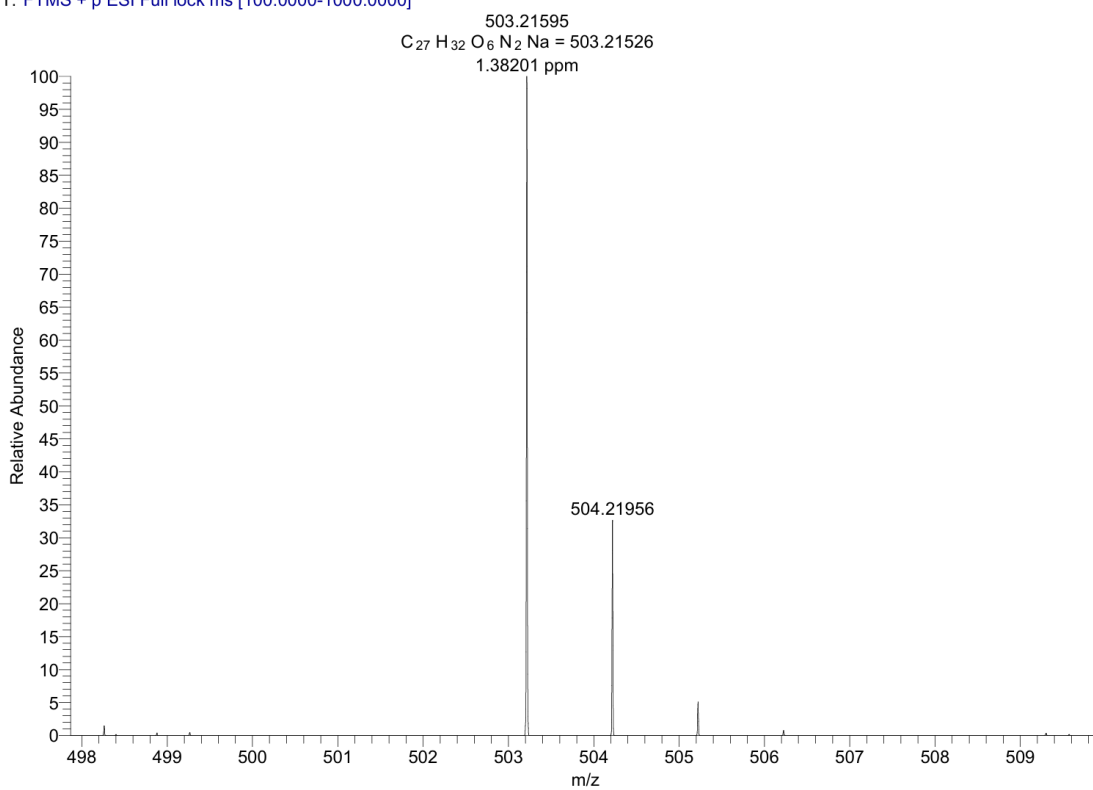


Figure S66 HRMS spectrum of compound 4k