

Supplementary data

Synthesis of substituted naphtho[1,2-*b*]benzofuran-7(8*H*)-ones via photoinduced rearrangement of 4*H*-chromen-4-ones derivatives

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Constantine V. Milyutin^a, Artem N. Fakhrutdinov^a, Yury O. Gorbunov^a, and
Michail M. Krayushkin^a

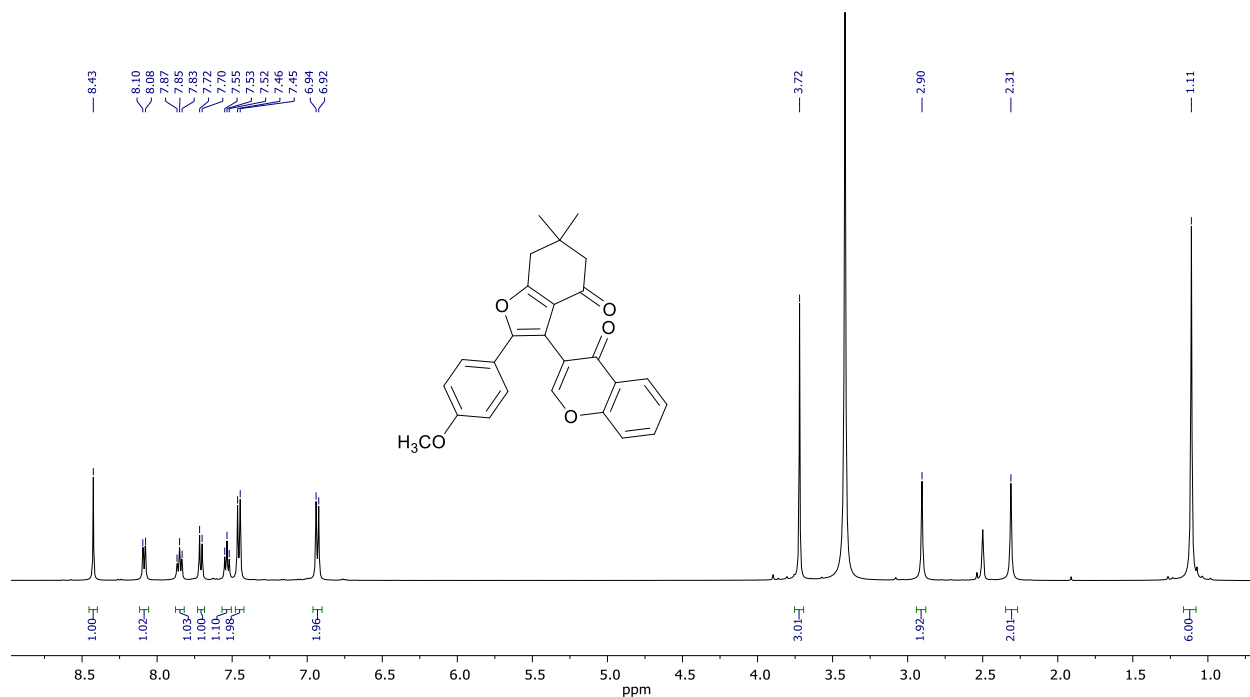
^aN.D. Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences, Leninsky Pr., 47, Moscow 119991, Russian Federation

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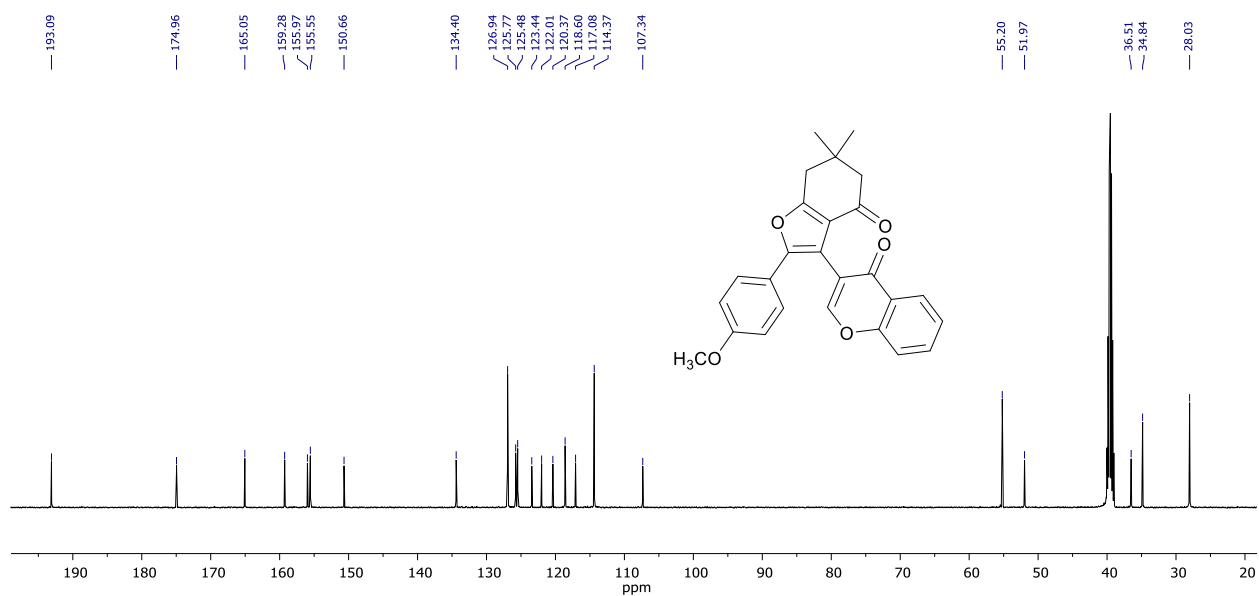
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1. NMR ^1H and ^{13}C spectra for compounds **1**.

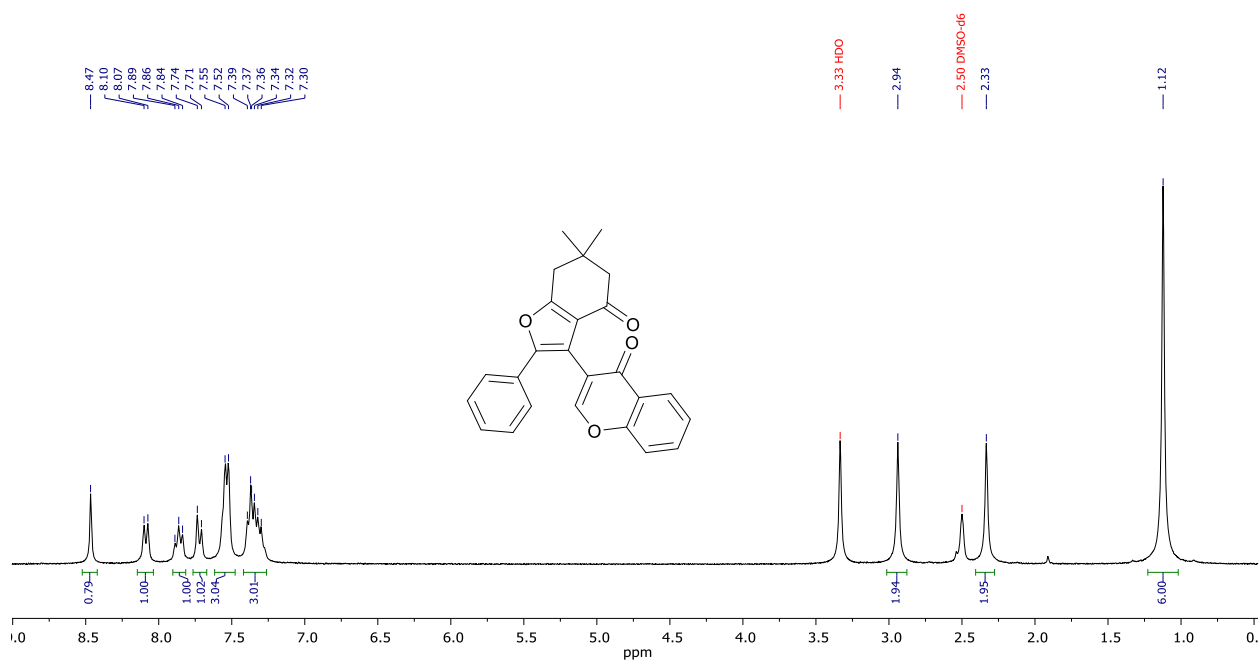
^1H NMR spectrum (500 MHz) of **1a** in $\text{DMSO}-d_6$



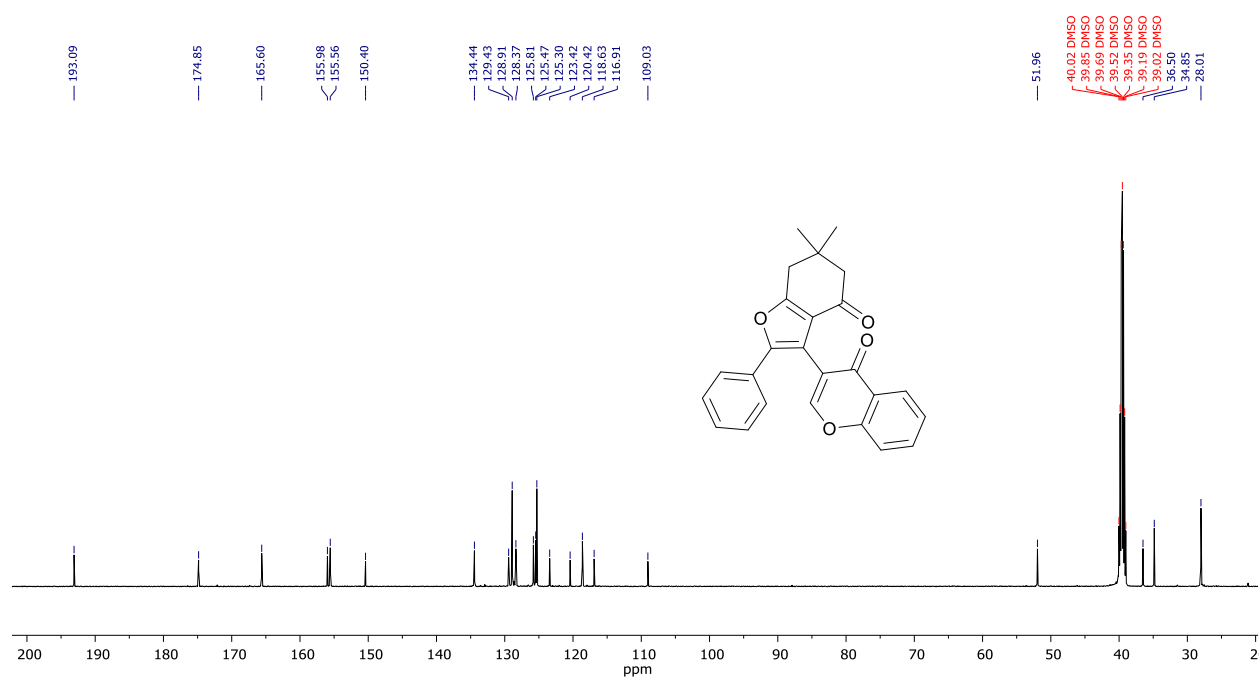
^{13}C NMR spectrum (126 MHz) of **1a** in $\text{DMSO}-d_6$



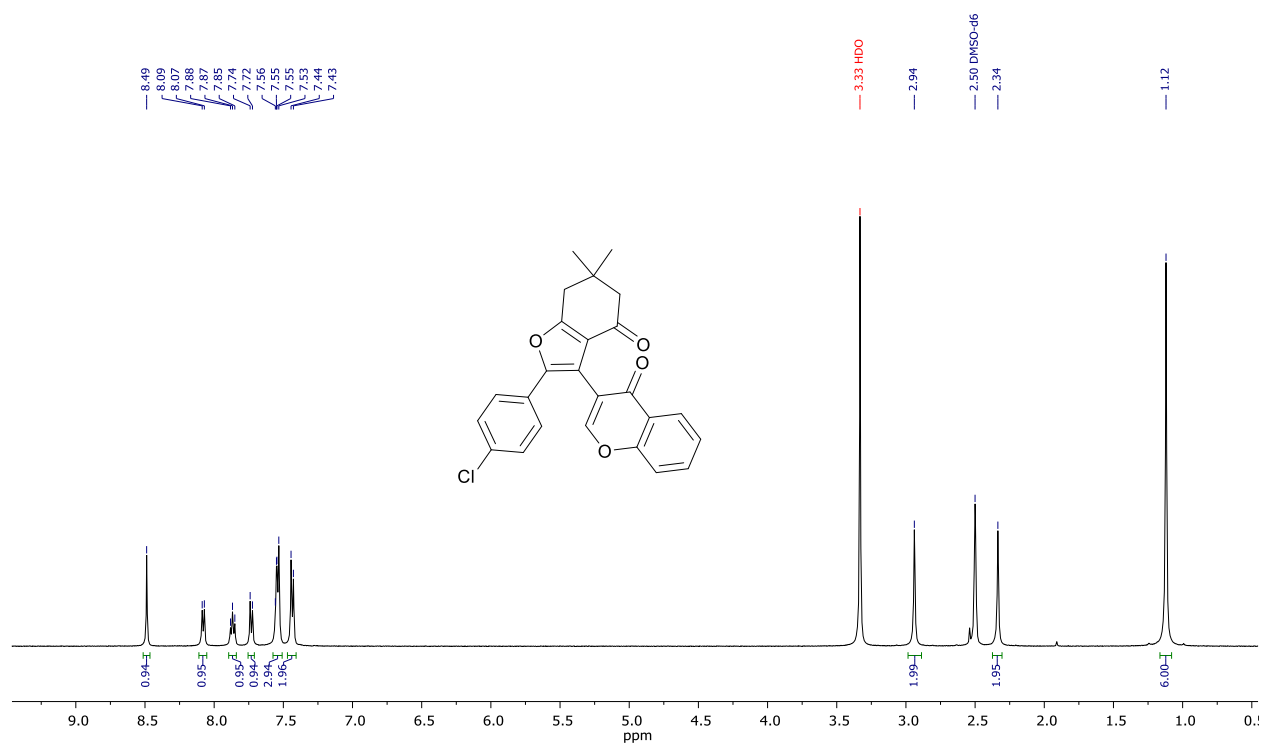
^1H NMR spectrum (300 MHz) of **1b** in $\text{DMSO}-d_6$



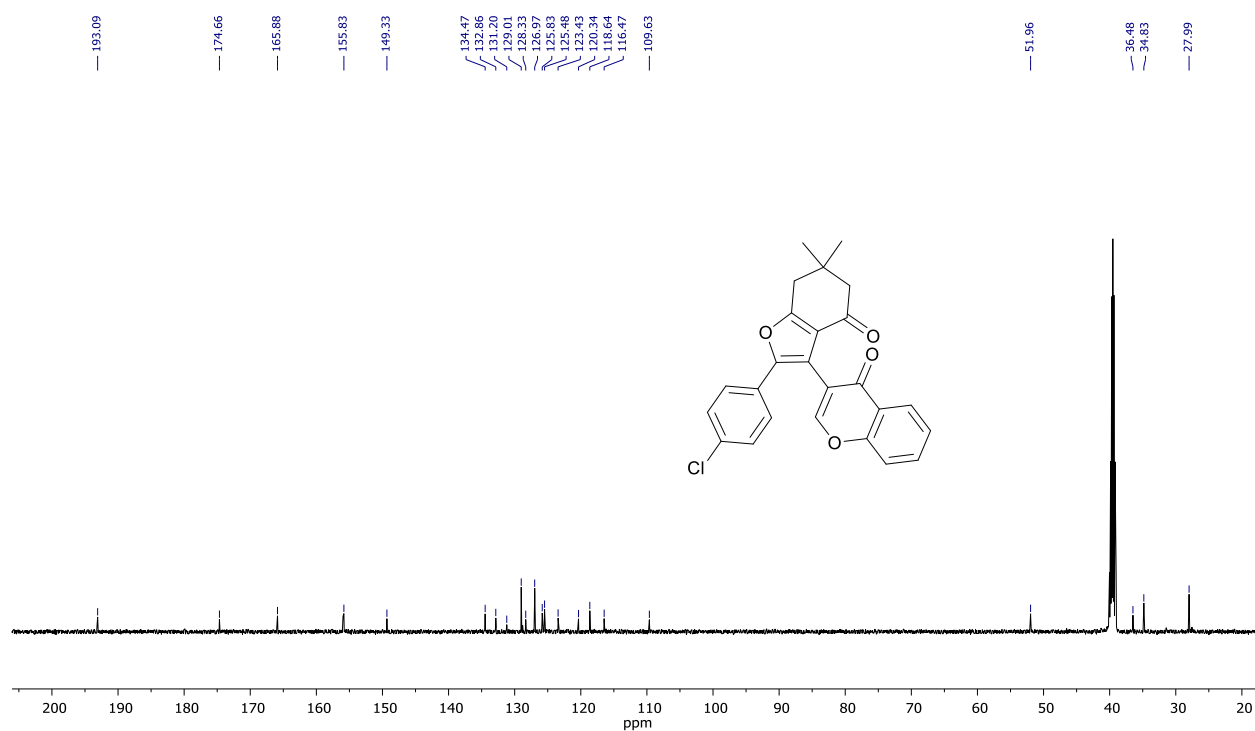
^{13}C NMR spectrum (126 MHz) of **1b** in $\text{DMSO}-d_6$



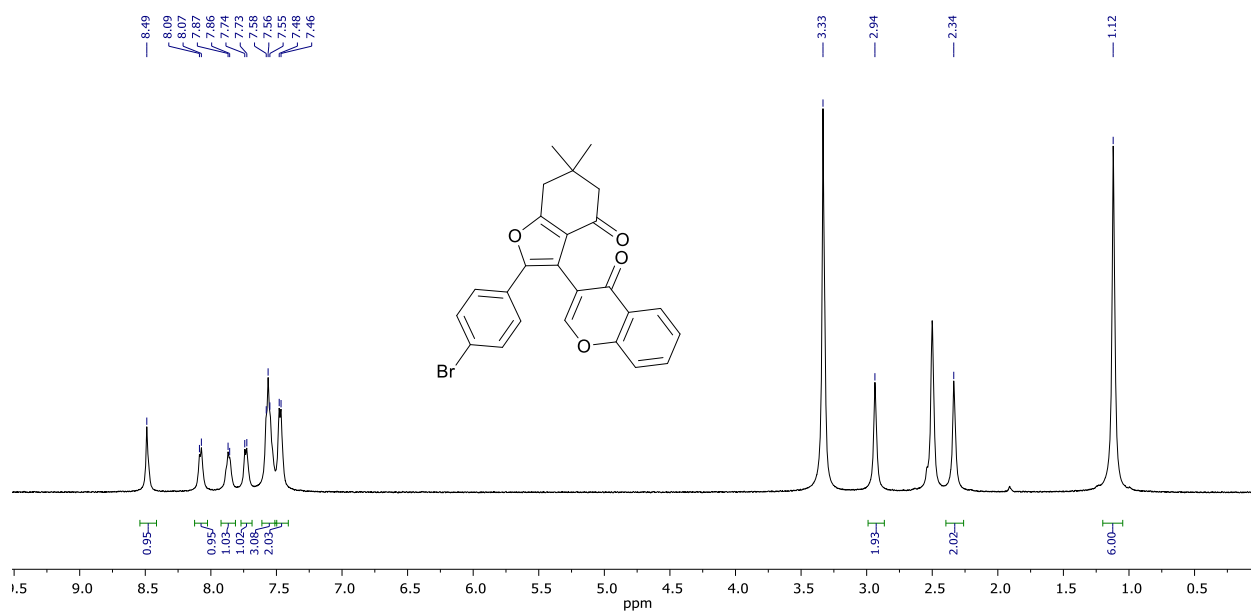
^1H NMR spectrum (500 MHz) of **1c** in $\text{DMSO}-d_6$



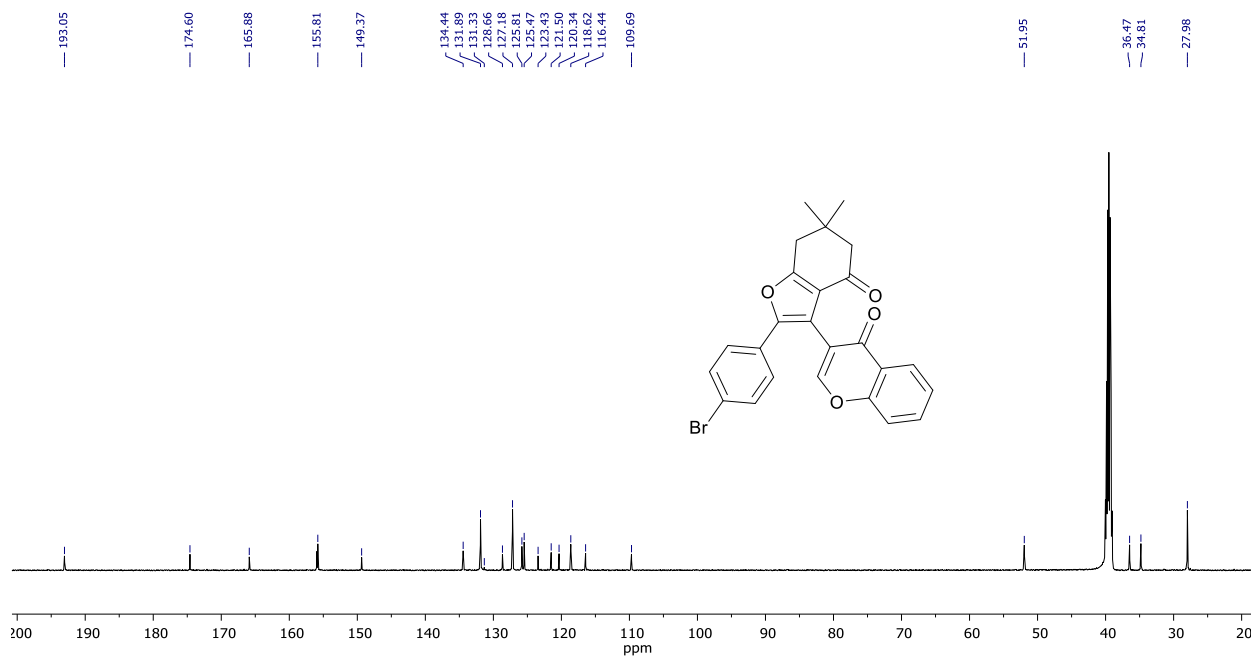
^{13}C NMR spectrum (126 MHz) of **1c** in $\text{DMSO}-d_6$



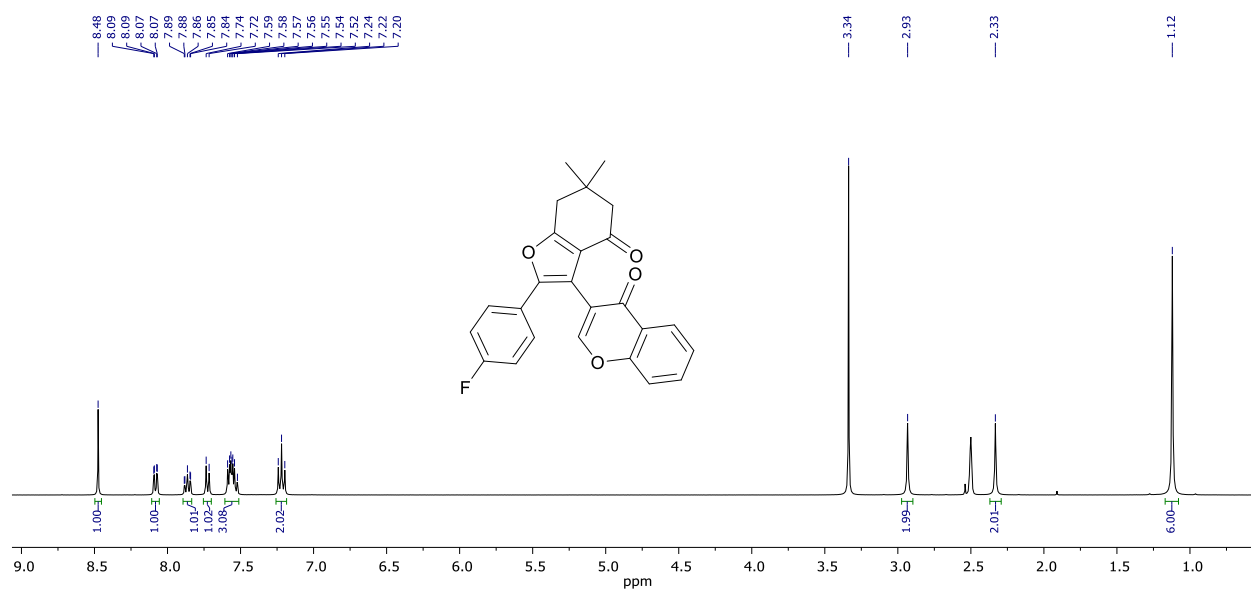
^1H NMR spectrum (500 MHz) of **1d** in $\text{DMSO}-d_6$



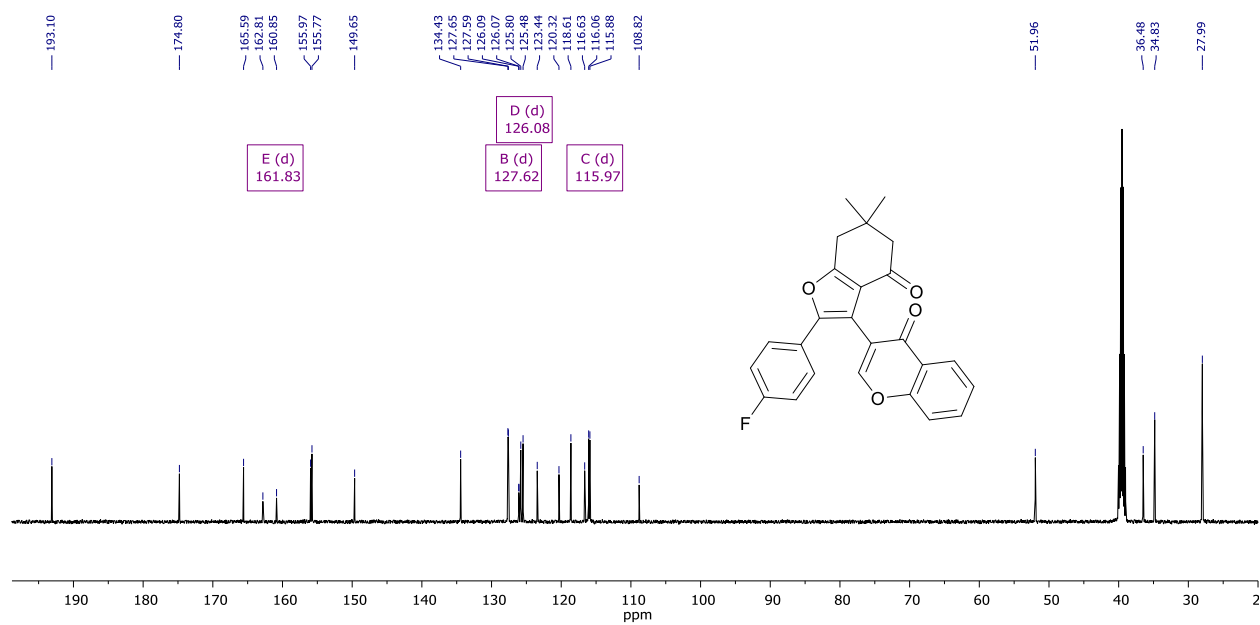
^{13}C NMR spectrum (126 MHz) of **1d** in $\text{DMSO}-d_6$



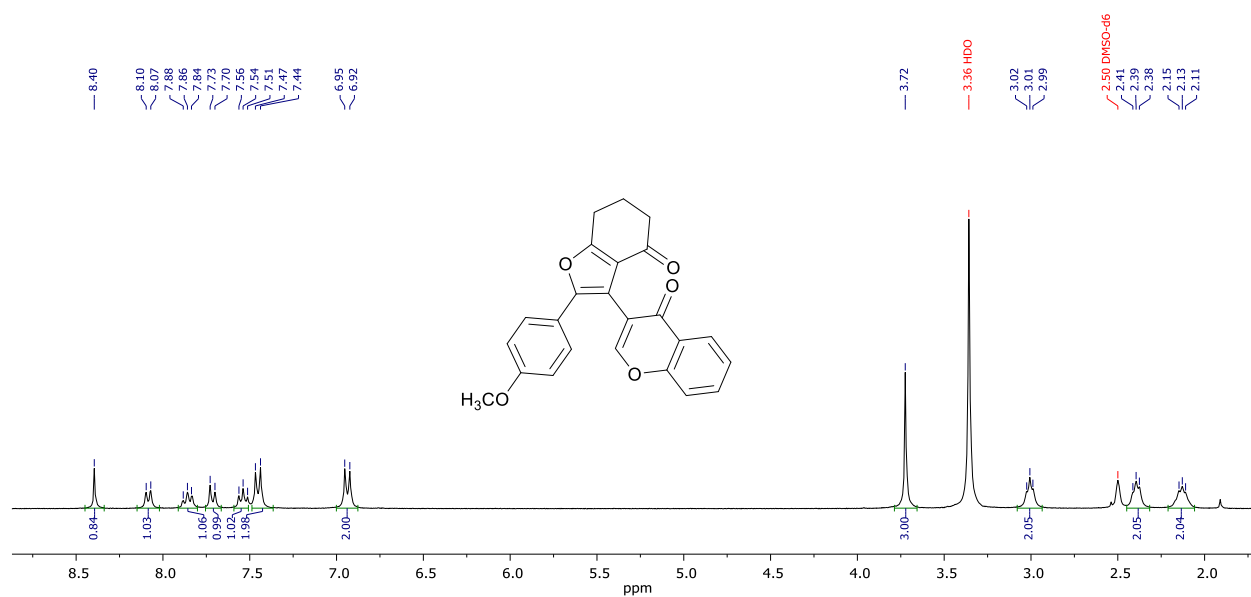
^1H NMR spectrum (400 MHz) of **1e** in $\text{DMSO}-d_6$



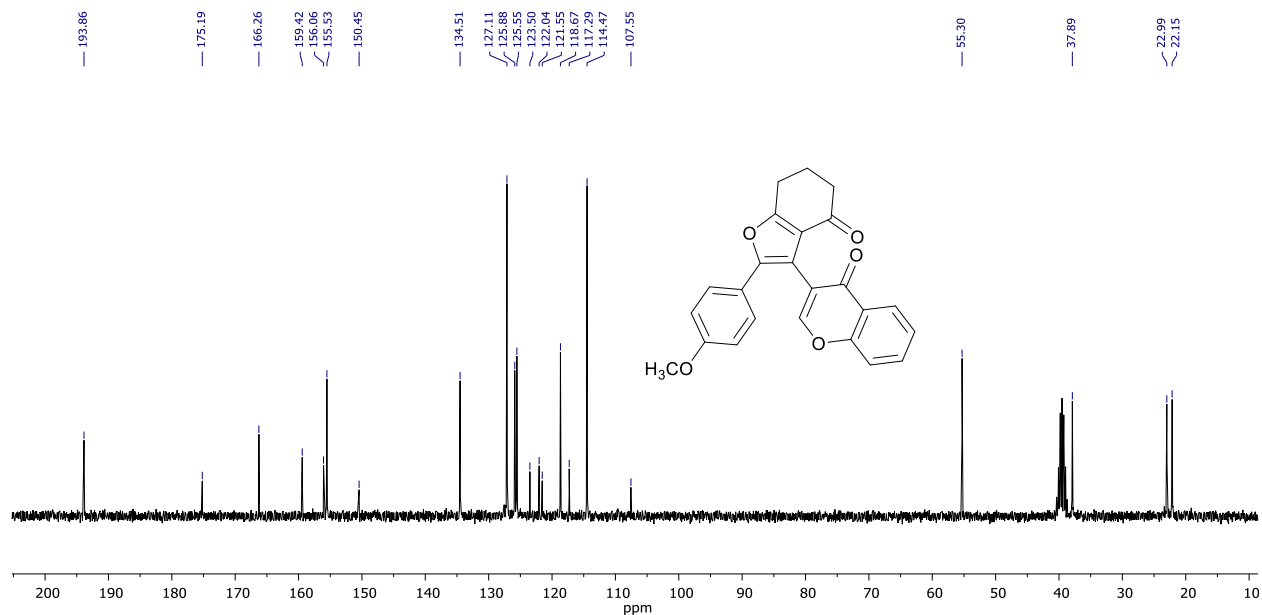
^{13}C NMR spectrum (126 MHz) of **1e** in $\text{DMSO}-d_6$



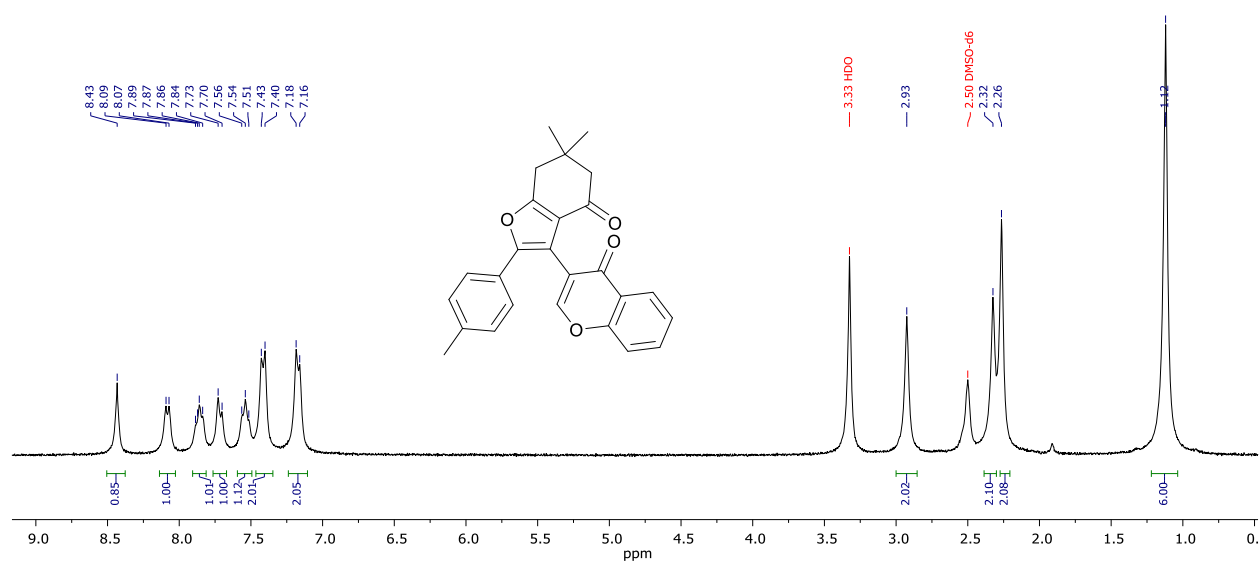
^1H NMR spectrum (300 MHz) of **1f** in $\text{DMSO-}d_6$



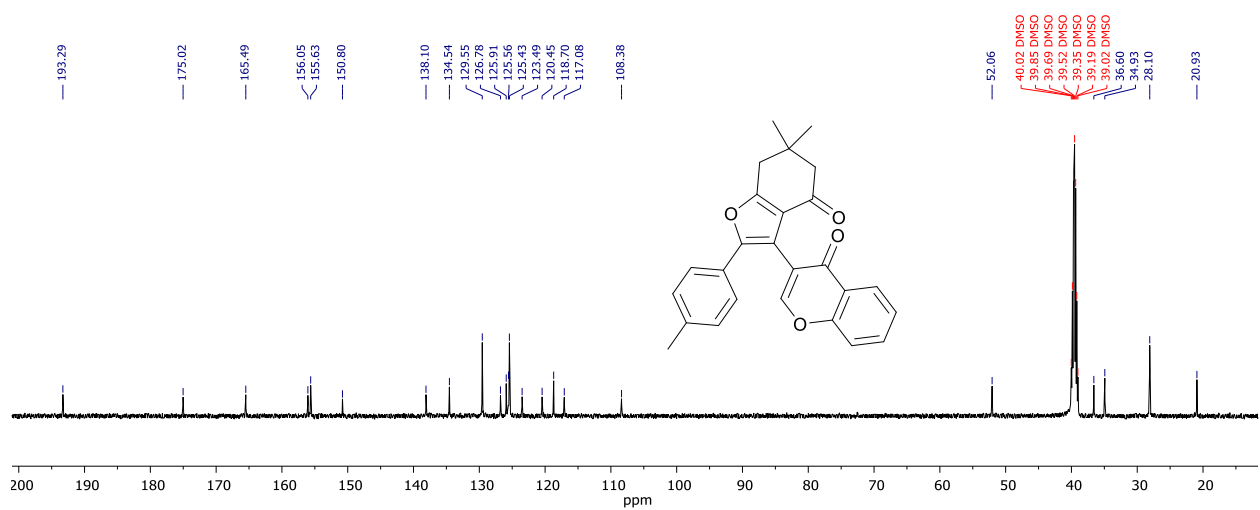
^{13}C NMR spectrum (75 MHz) of **1f** in $\text{DMSO-}d_6$



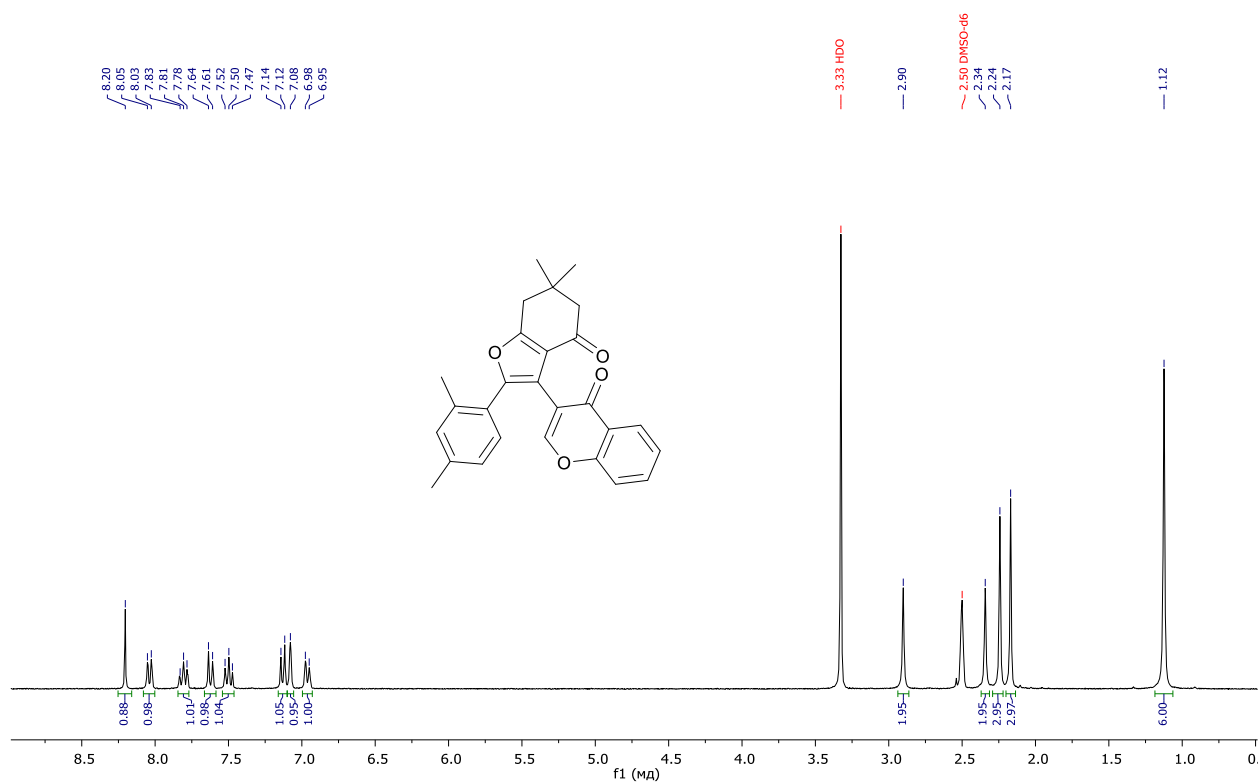
^1H NMR spectrum (300 MHz) of **1g** in $\text{DMSO}-d_6$



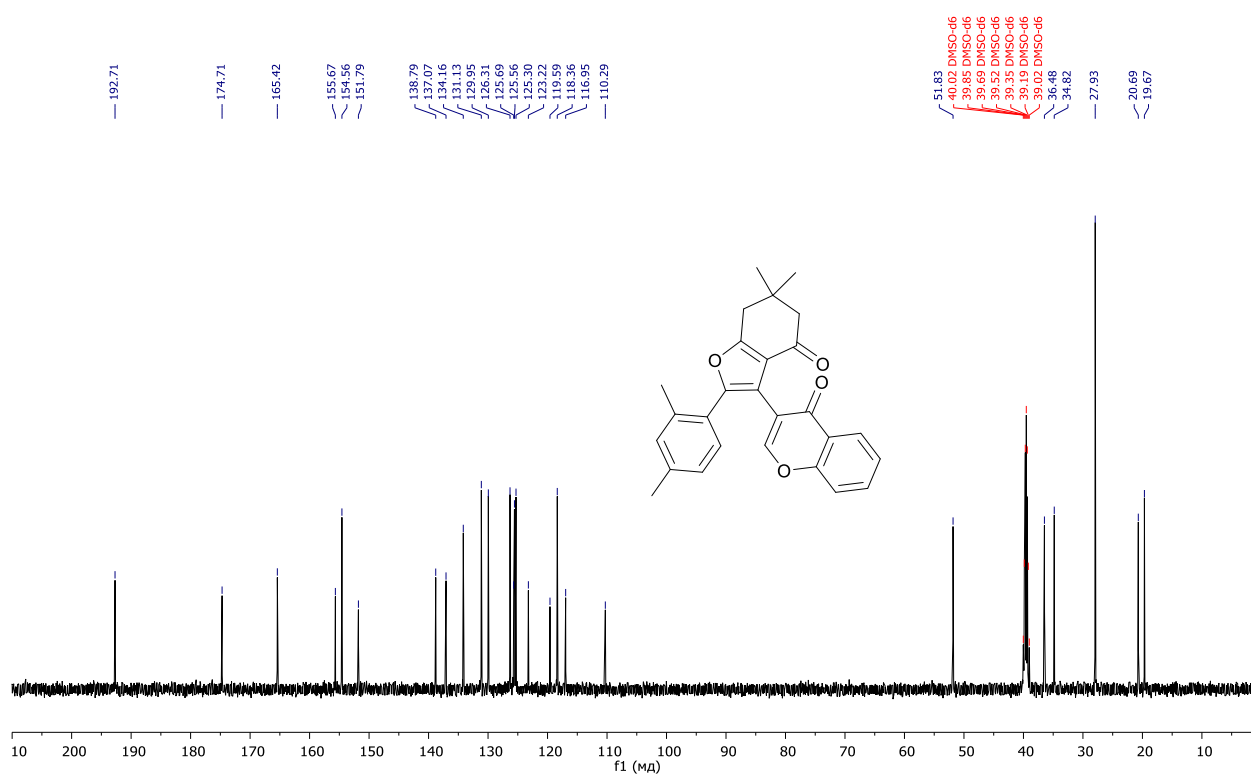
^{13}C NMR spectrum (126 MHz) of **1g** in $\text{DMSO}-d_6$



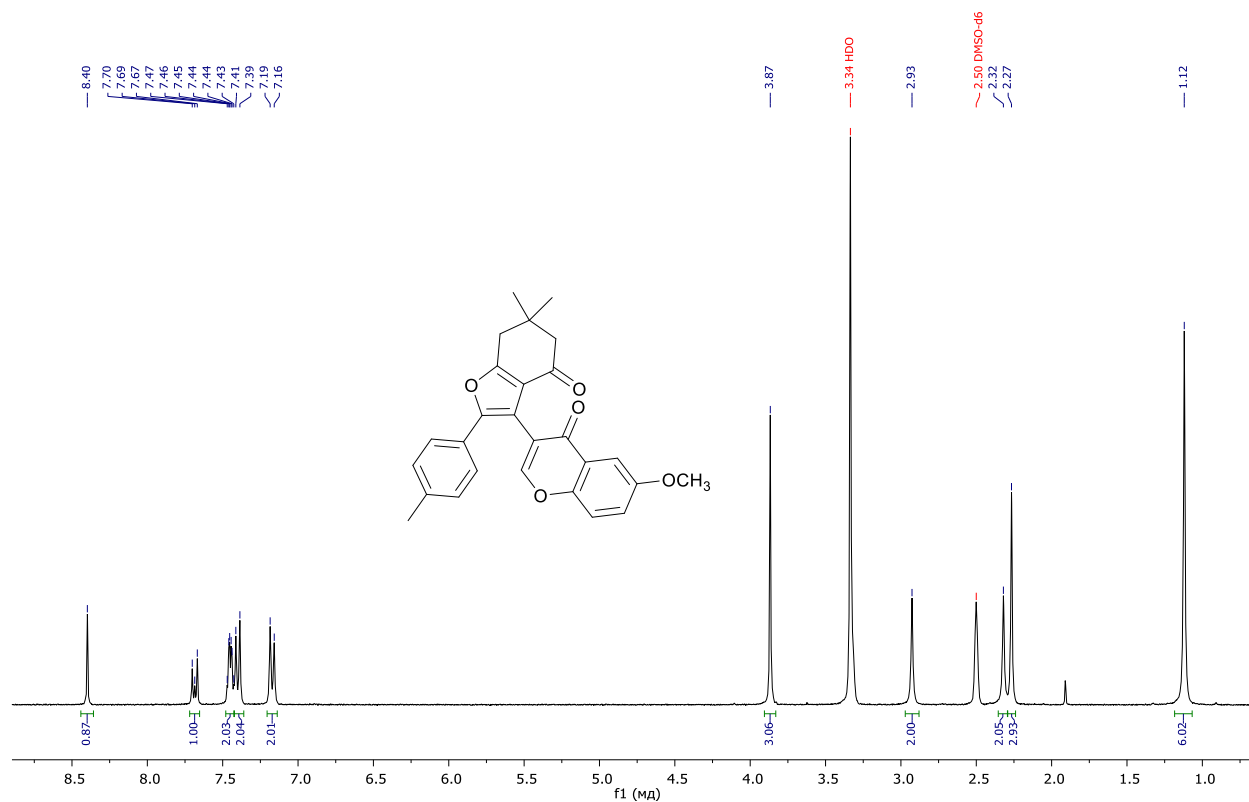
^1H NMR spectrum (300 MHz) of **1h** in $\text{DMSO}-d_6$



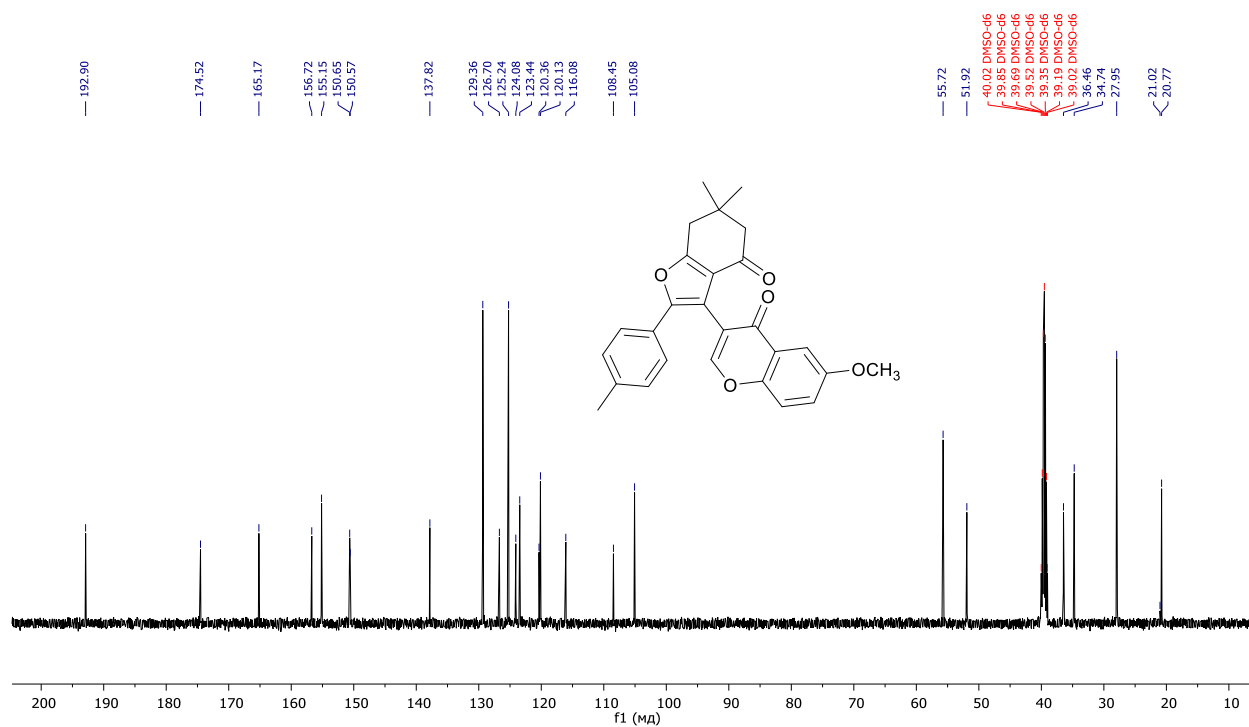
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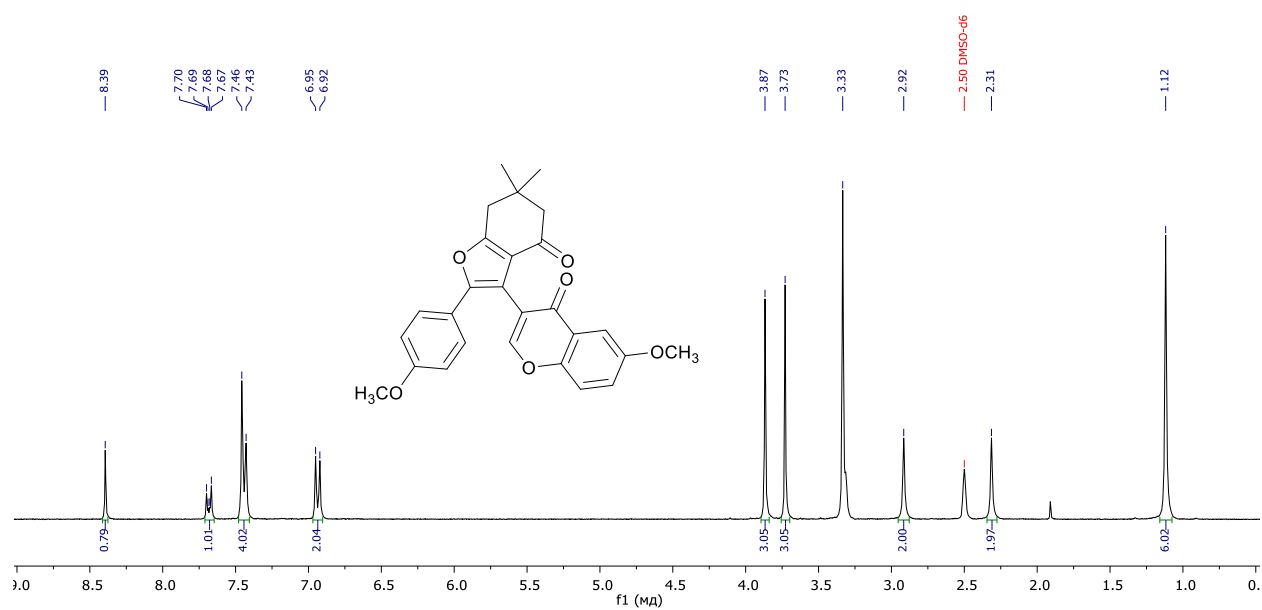
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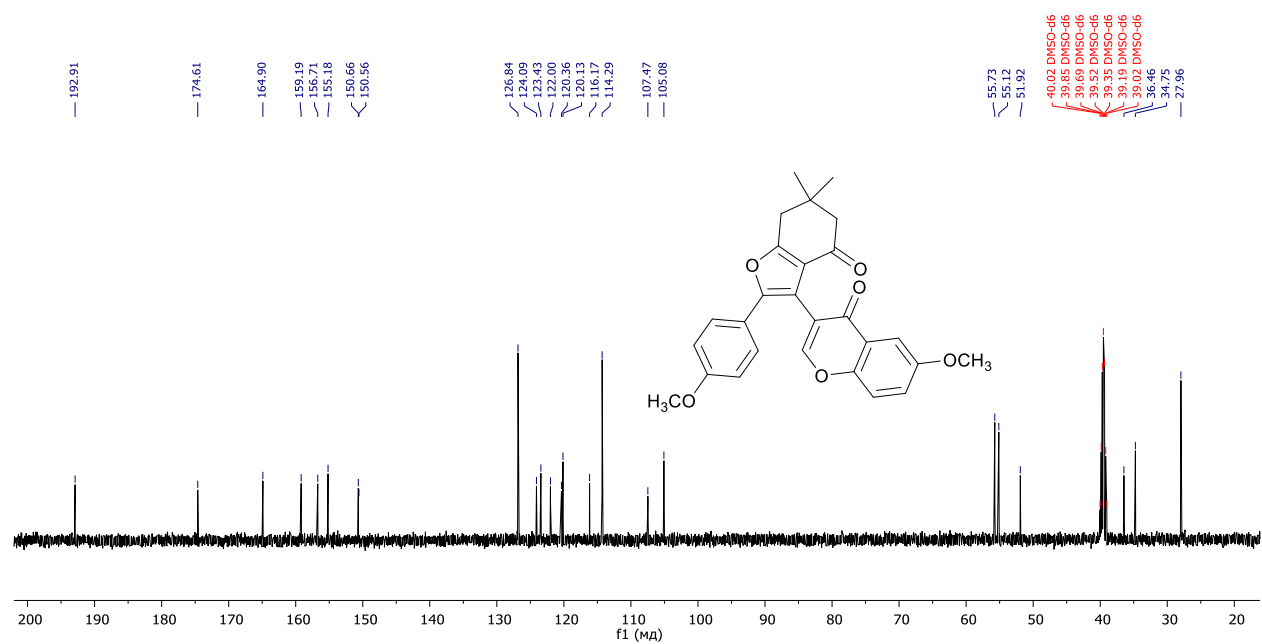
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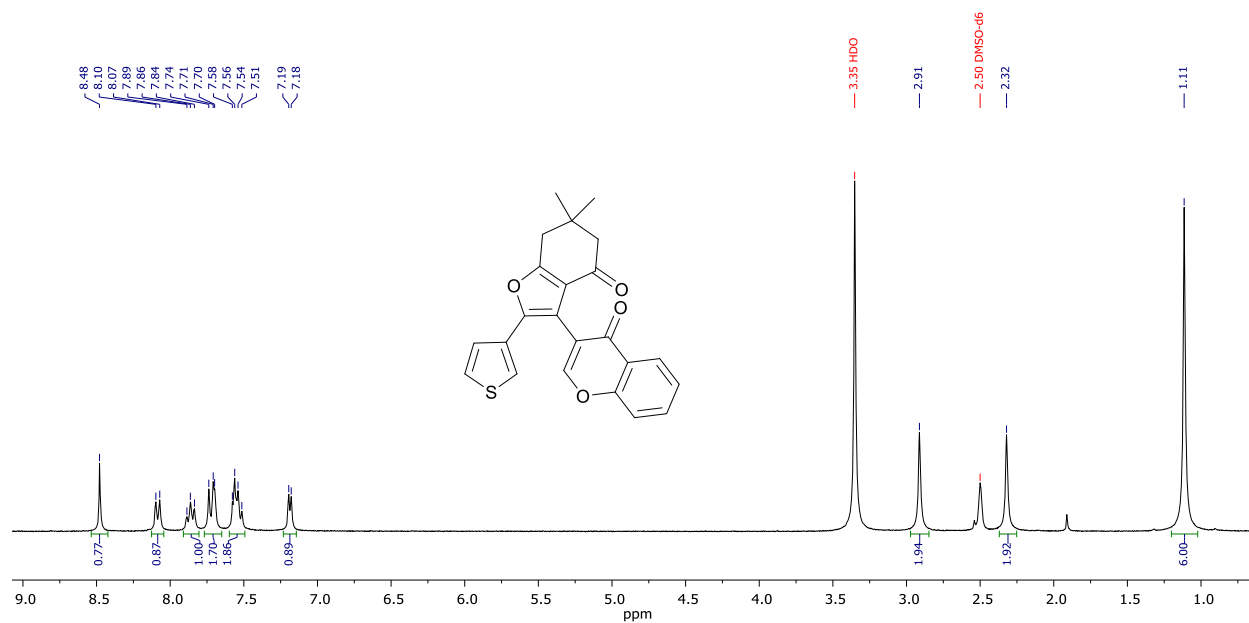
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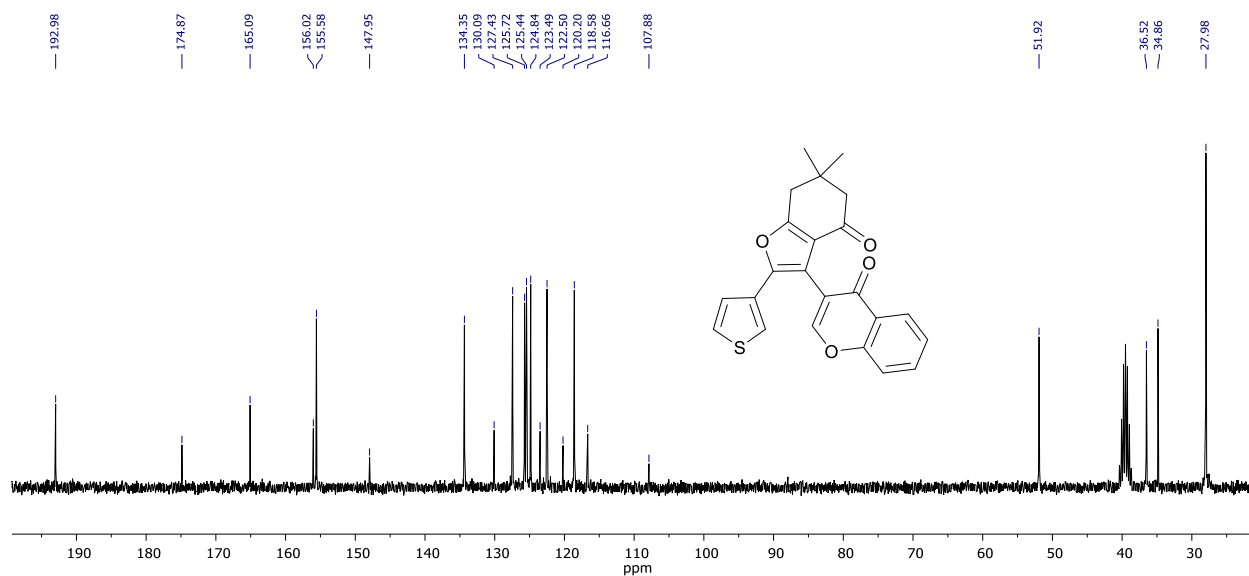
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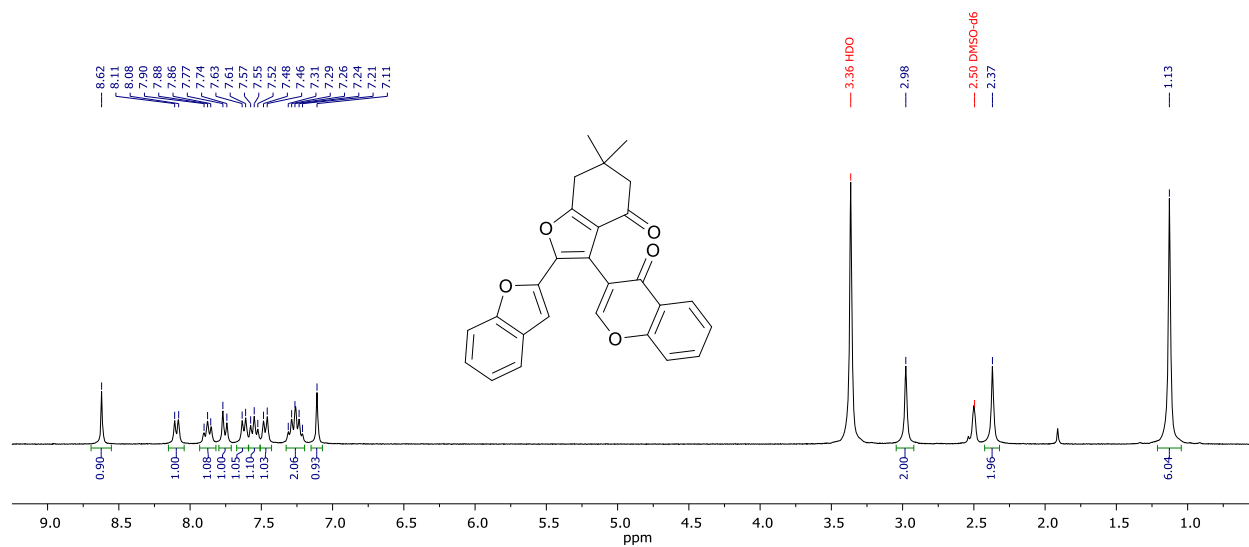
^1H NMR spectrum (300 MHz) of **1k** in $\text{DMSO}-d_6$



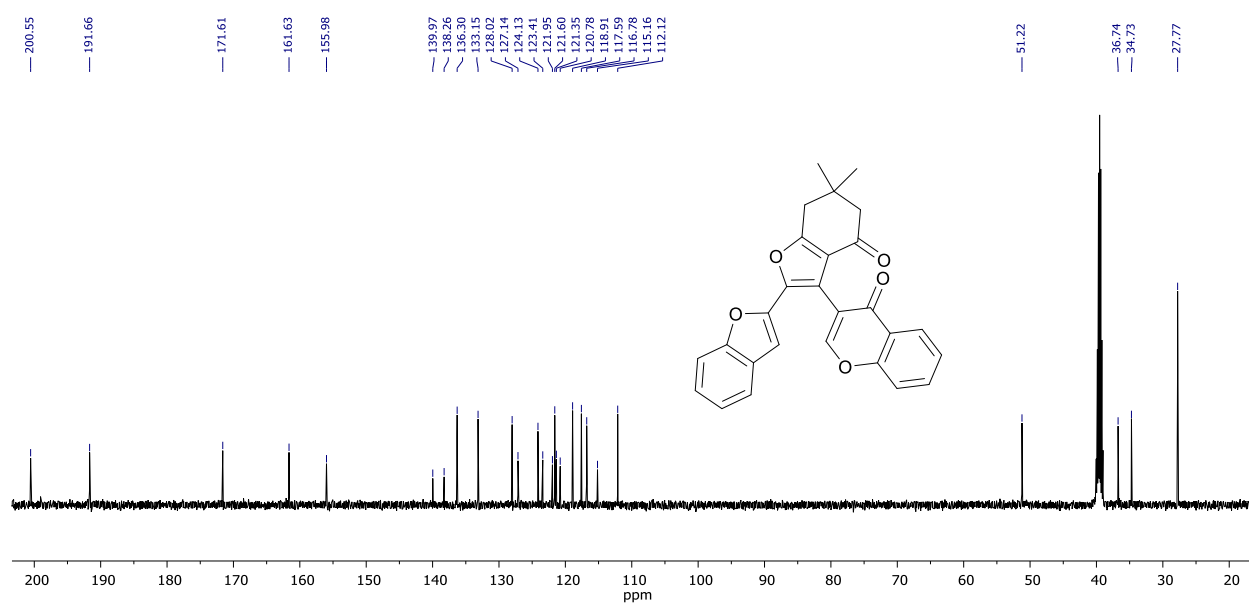
^{13}C NMR spectrum (75 MHz) of **1k** in $\text{DMSO}-d_6$



^1H NMR spectrum (300 MHz) of **11** in $\text{DMSO-}d_6$

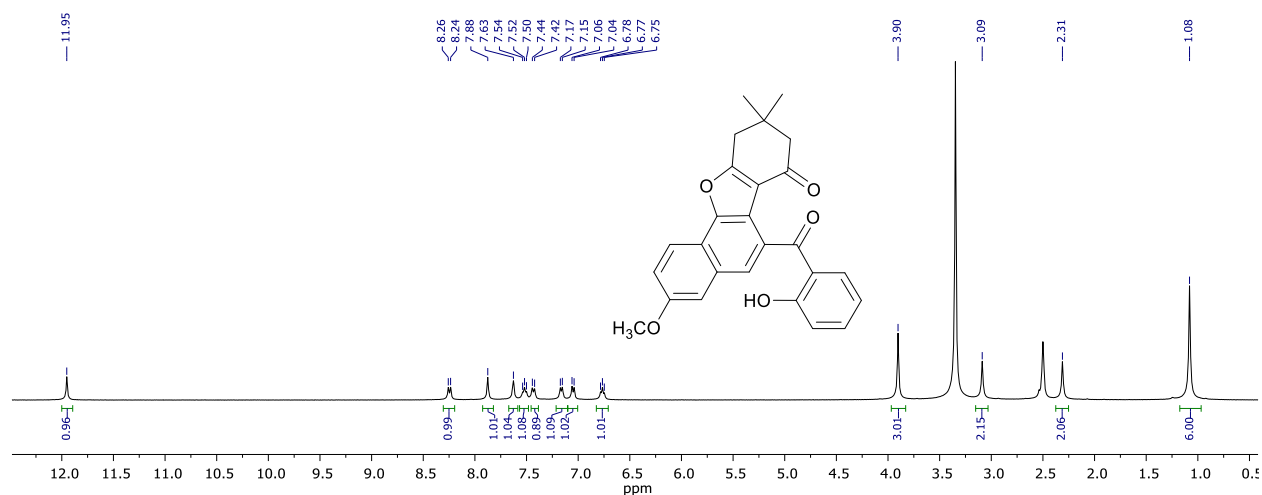


^{13}C NMR spectrum (75 MHz) of **11** in $\text{DMSO-}d_6$

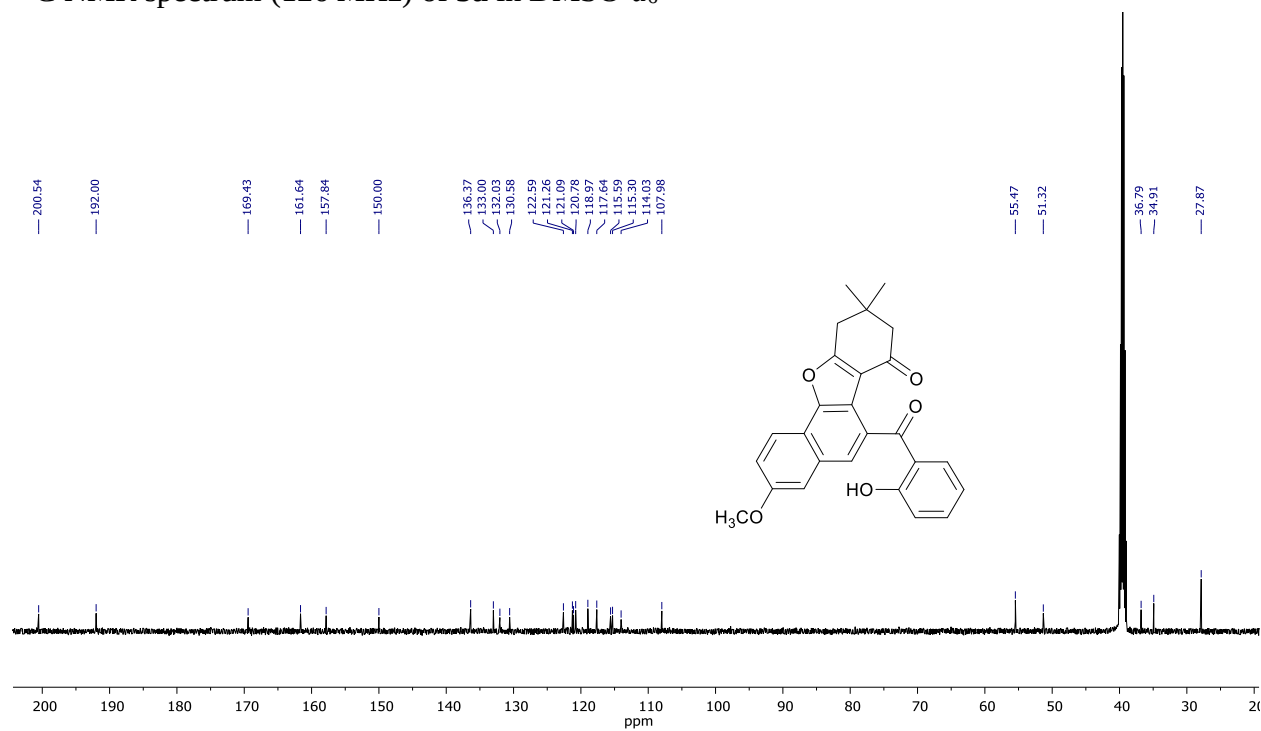


2. NMR ^1H and ^{13}C spectra for photoproducts 5.

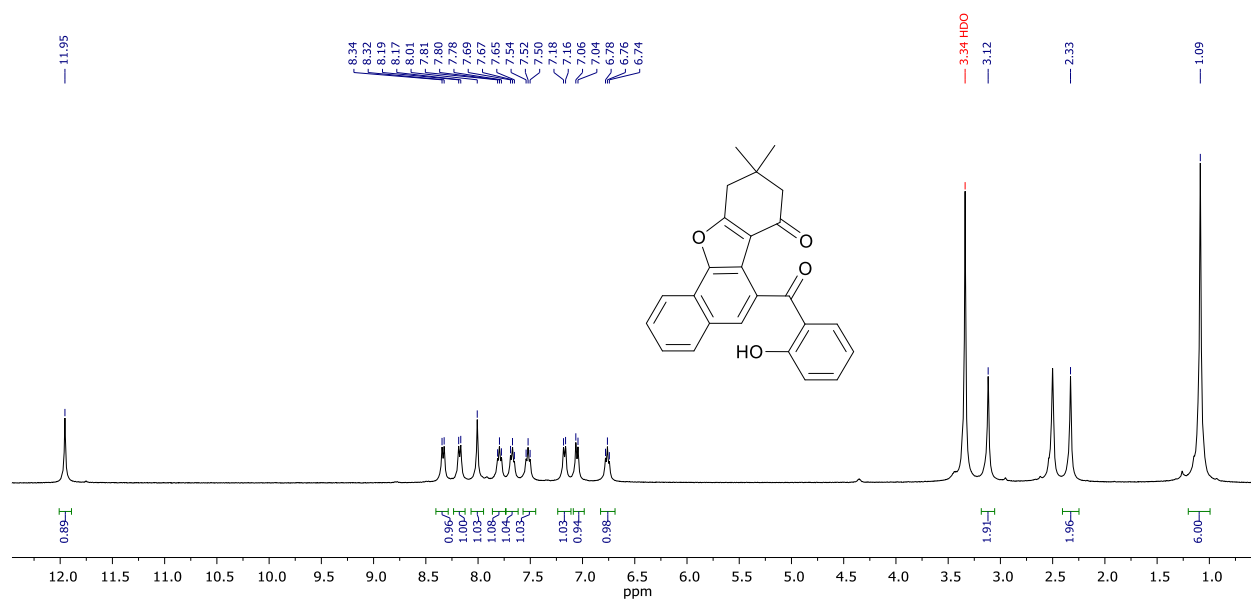
^1H NMR spectrum (400 MHz) of **5a** in $\text{DMSO}-d_6$



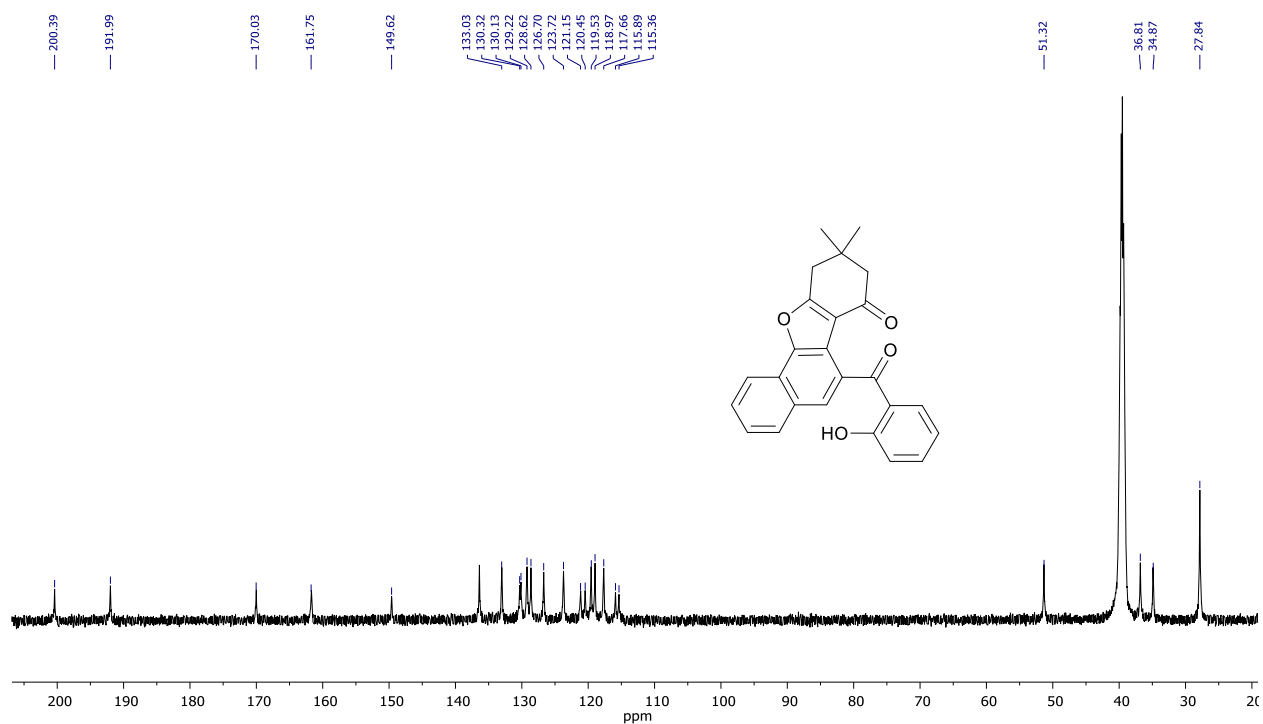
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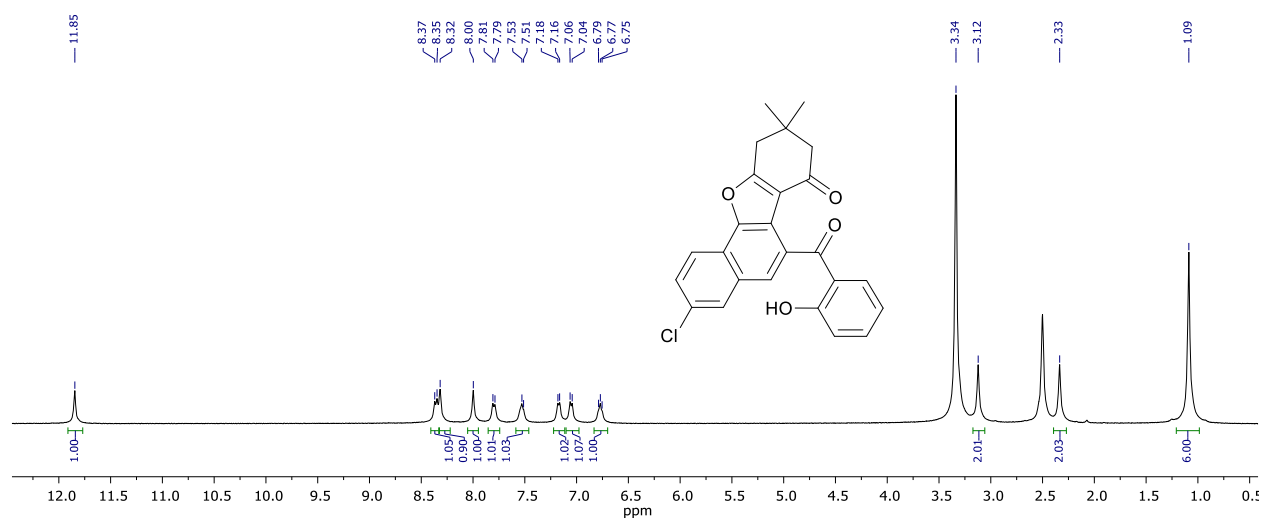
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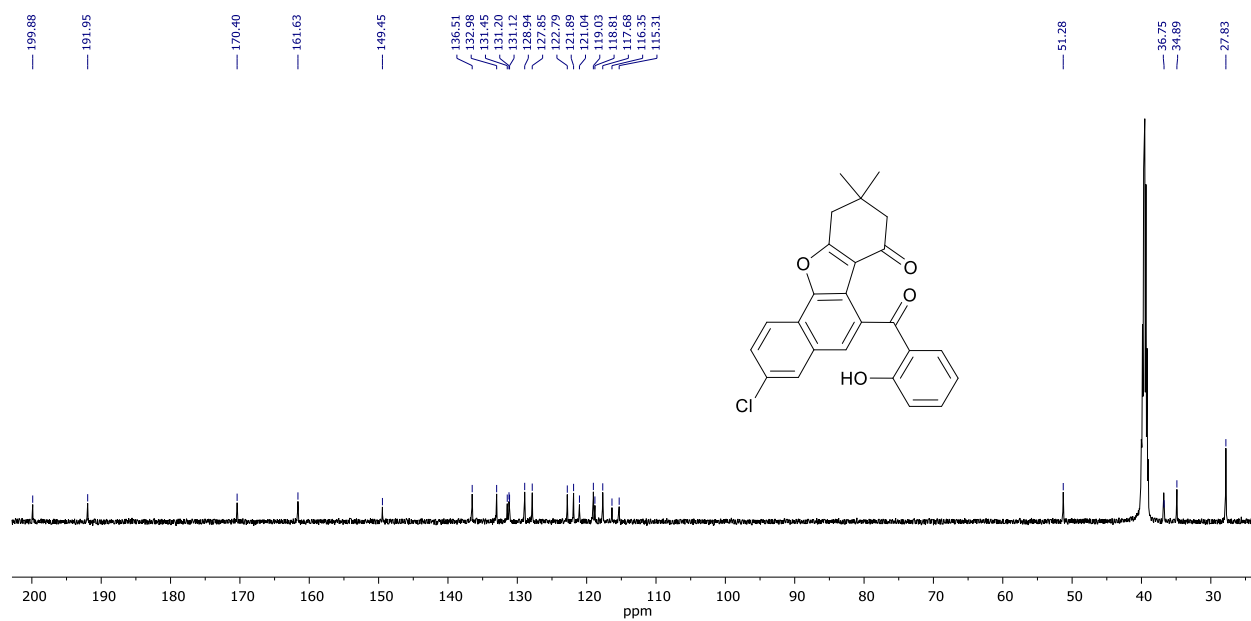
^{13}C NMR spectrum (126 MHz) of **5b** in $\text{DMSO}-d_6$



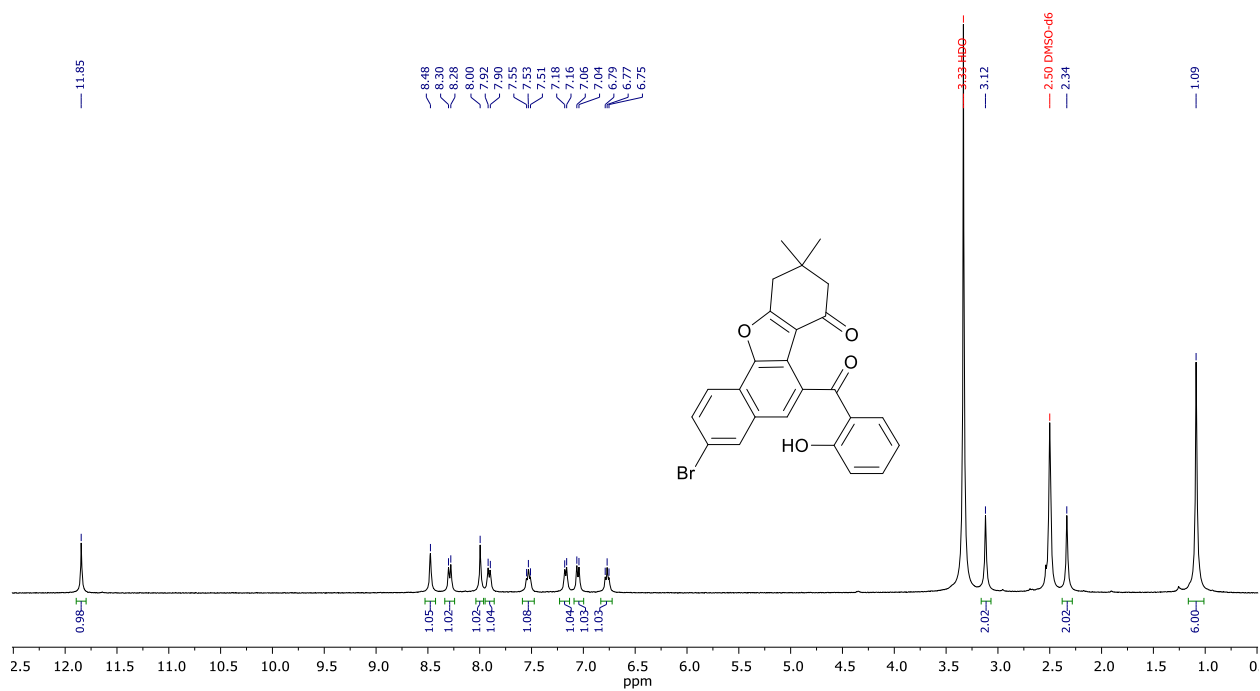
^1H NMR spectrum (400 MHz) of **5c** in $\text{DMSO}-d_6$



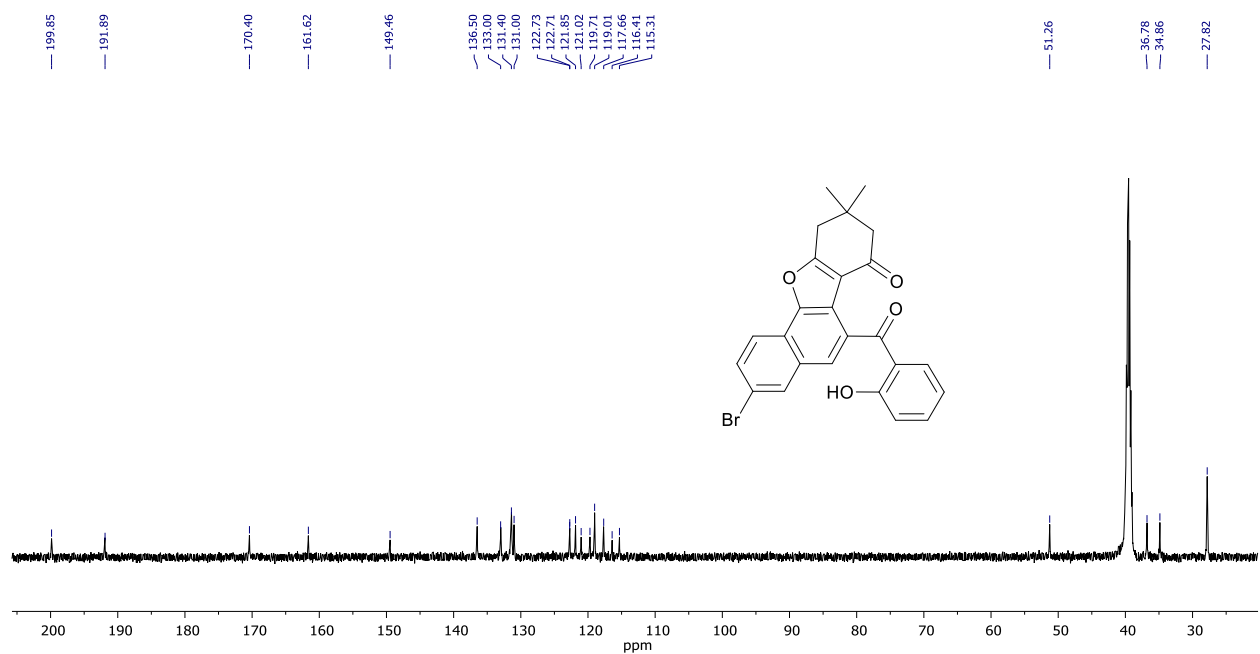
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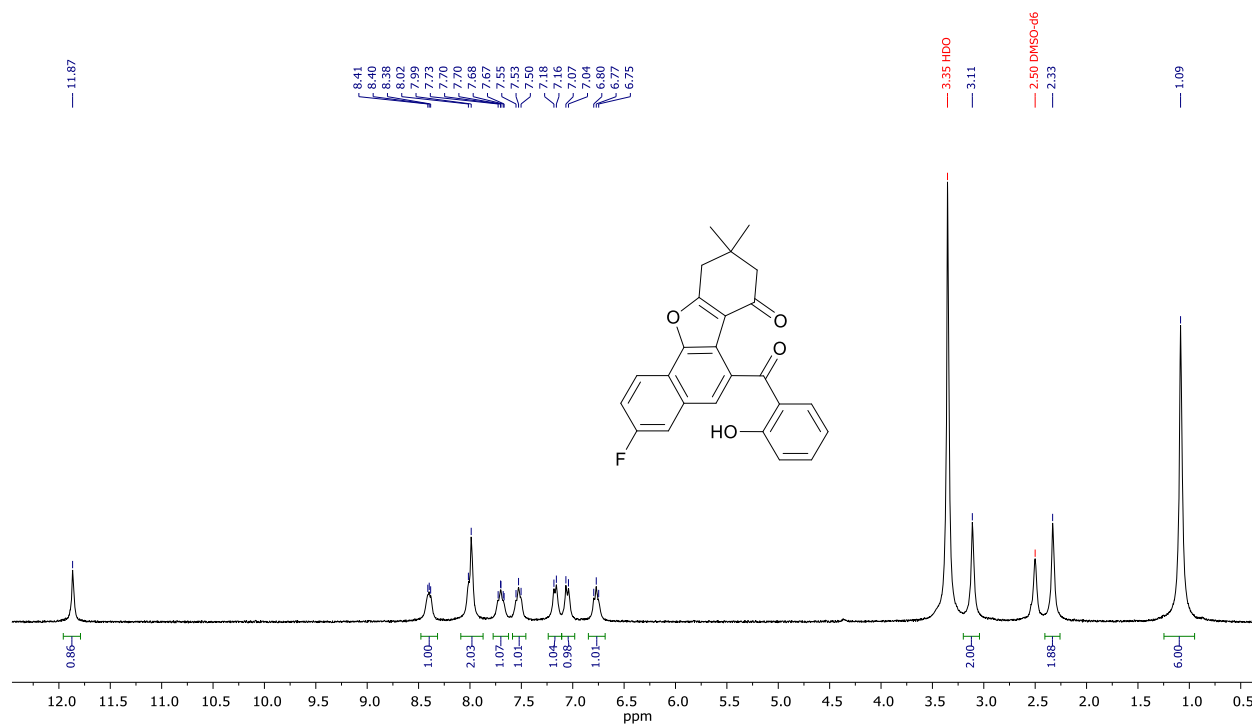
^1H NMR spectrum (400 MHz) of **5d** in $\text{DMSO}-d_6$



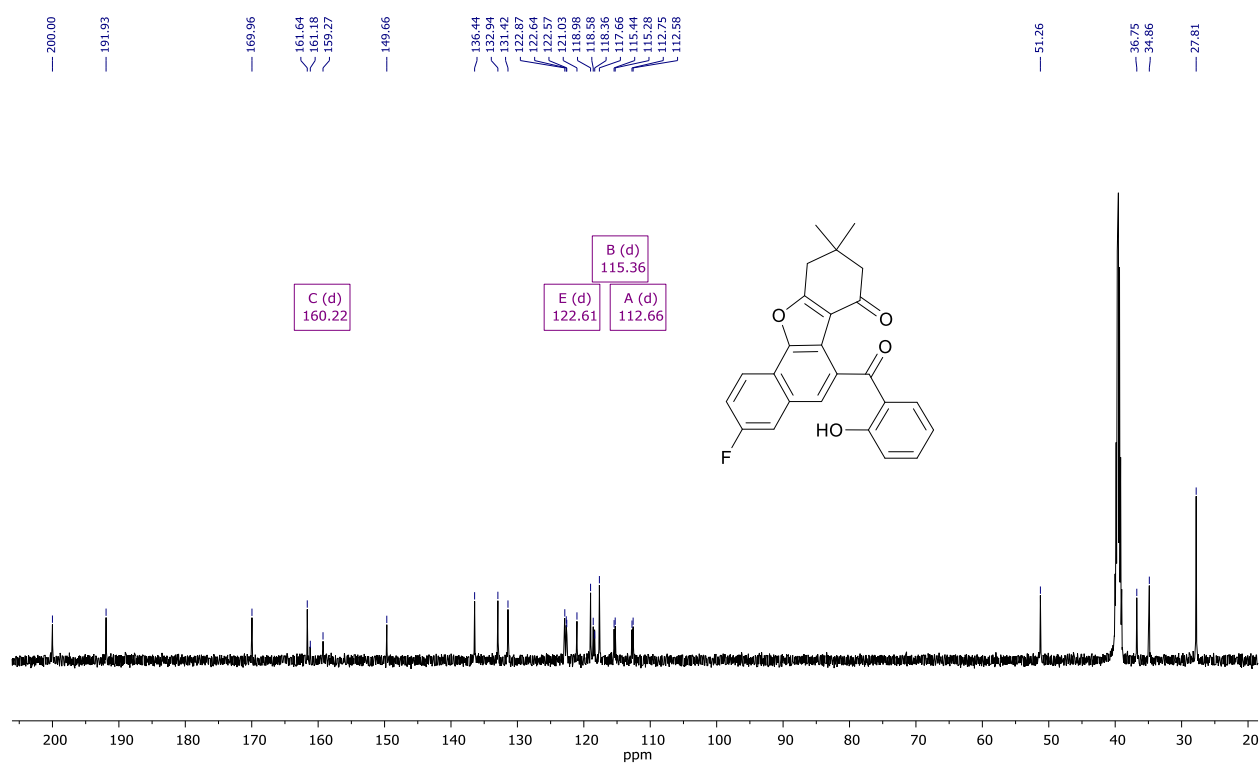
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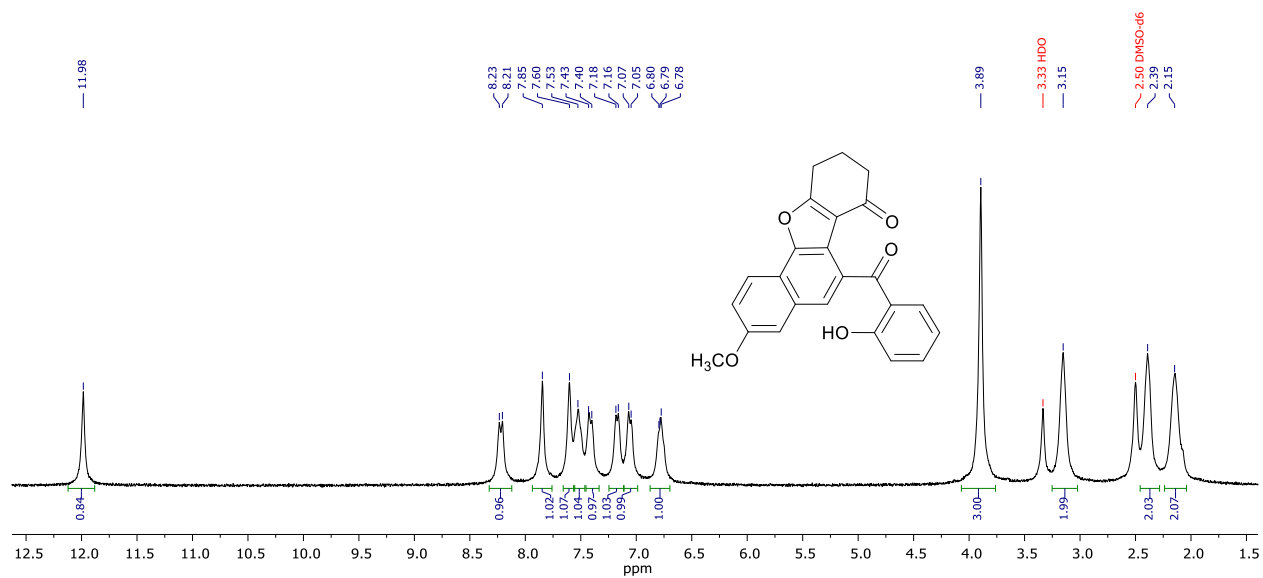
^1H NMR spectrum (300 MHz) of **5e** in $\text{DMSO}-d_6$



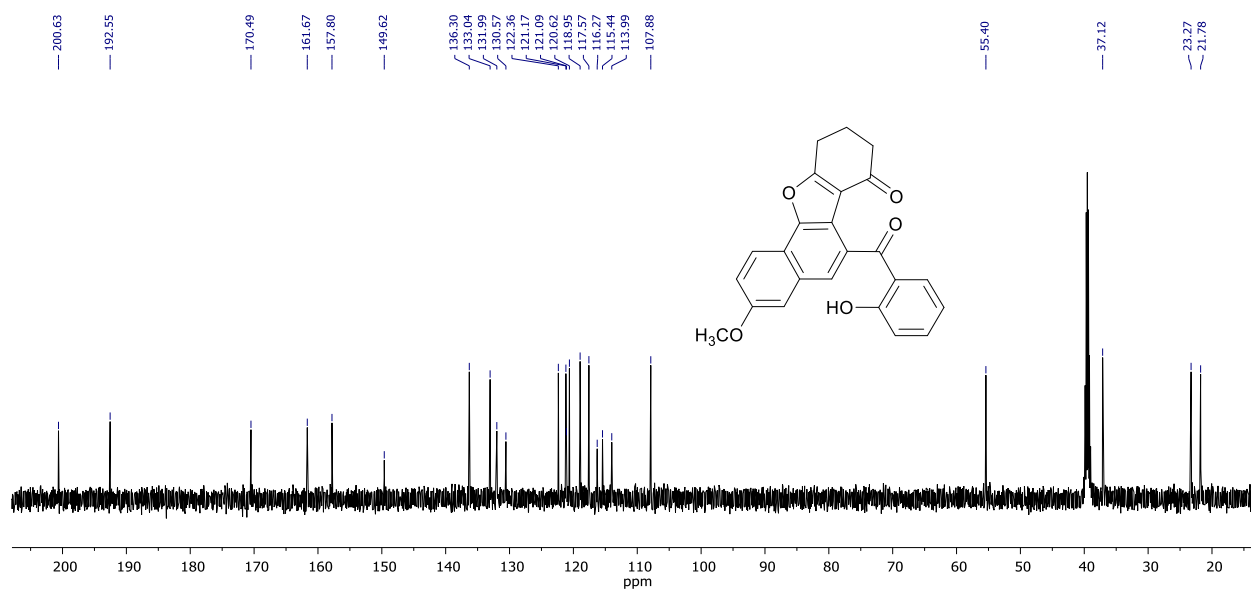
^{13}C NMR spectrum (126 MHz) of **5e** in $\text{DMSO}-d_6$



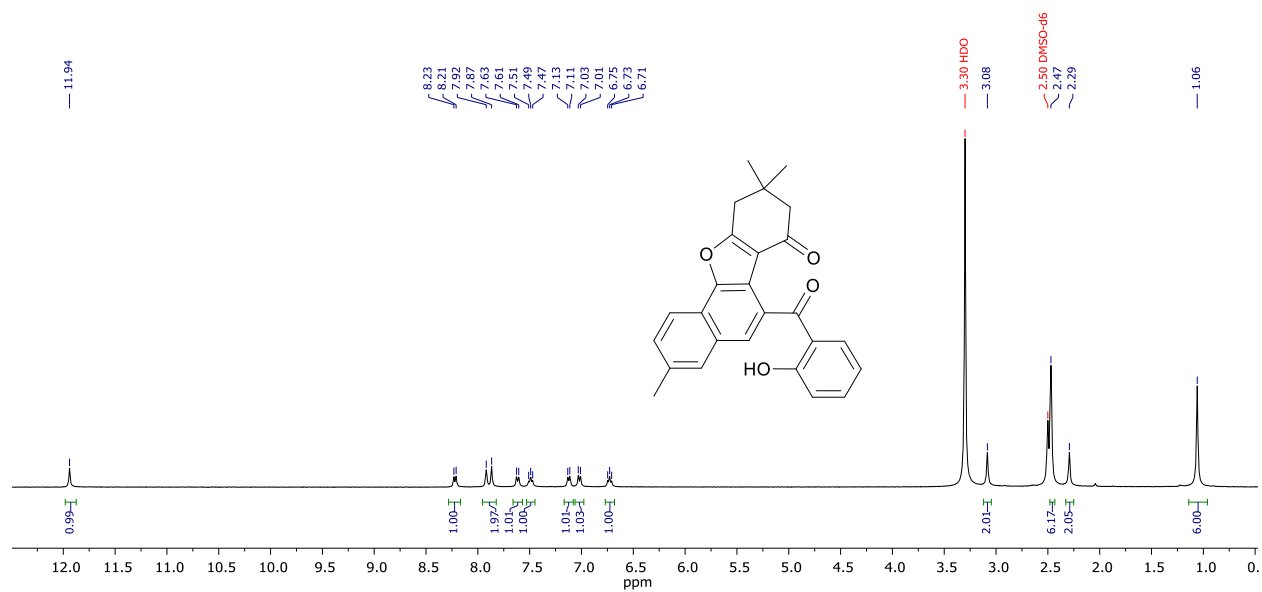
^1H NMR spectrum (300 MHz) of **5f** in $\text{DMSO}-d_6$



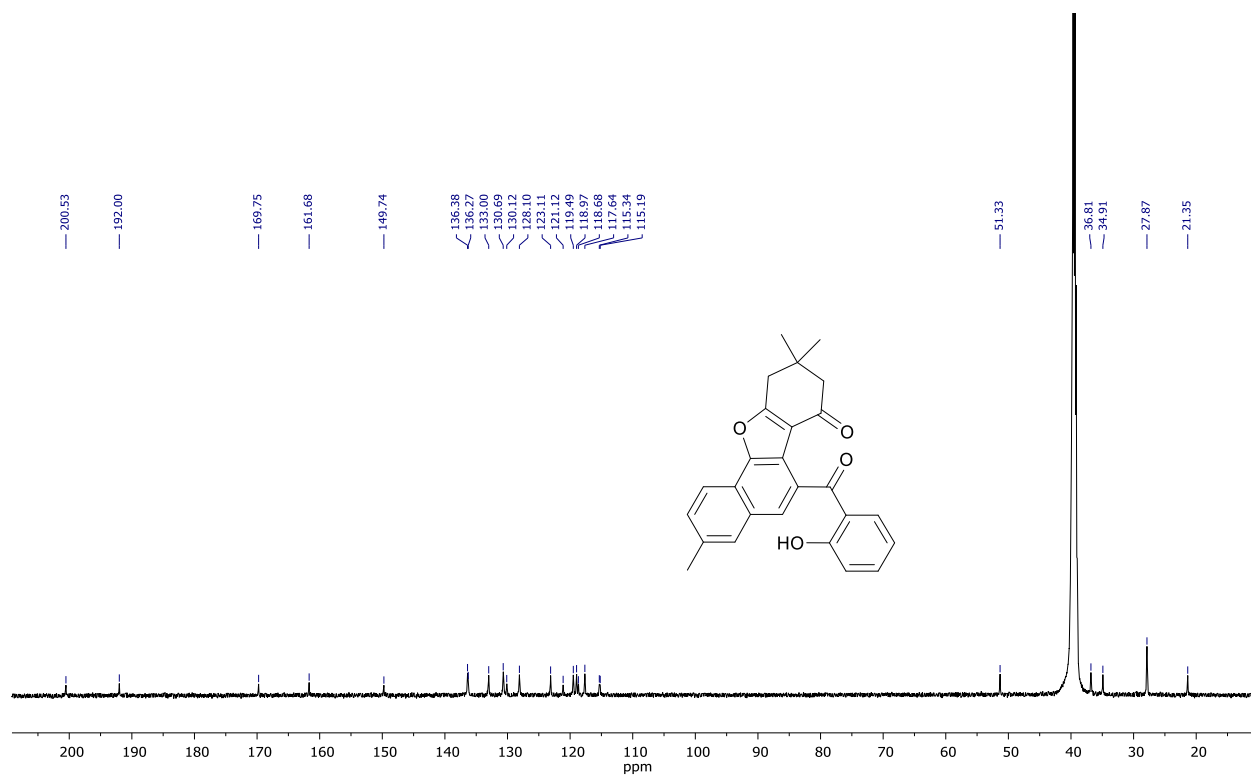
^{13}C NMR spectrum (126 MHz) of **5f** in $\text{DMSO}-d_6$



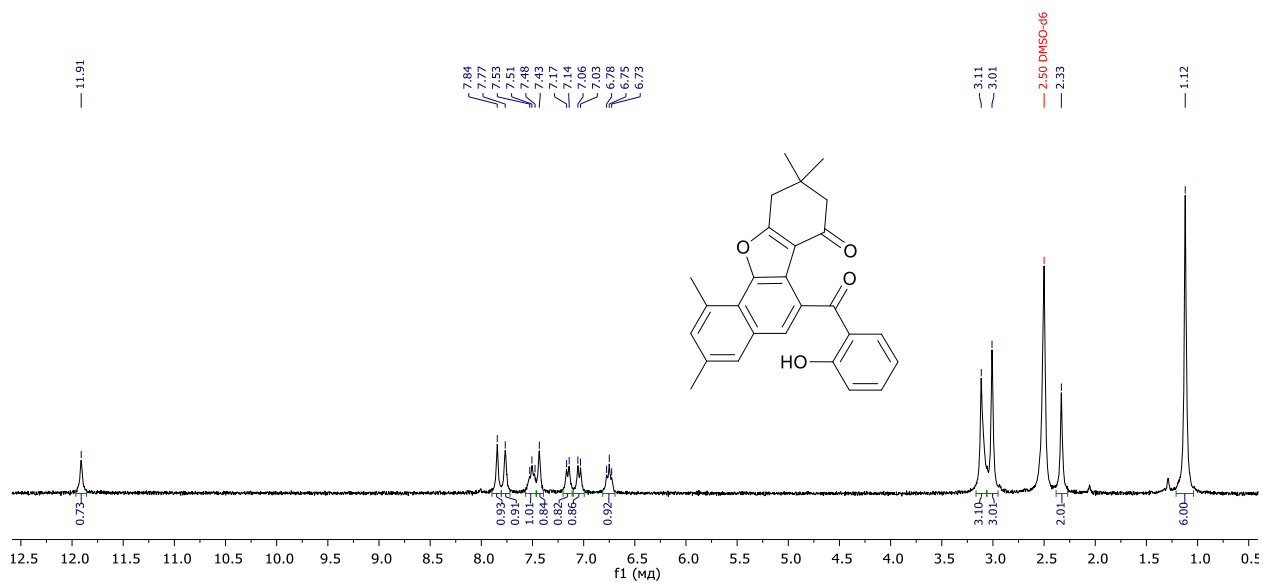
^1H NMR spectrum (400 MHz) of **5g** in $\text{DMSO}-d_6$



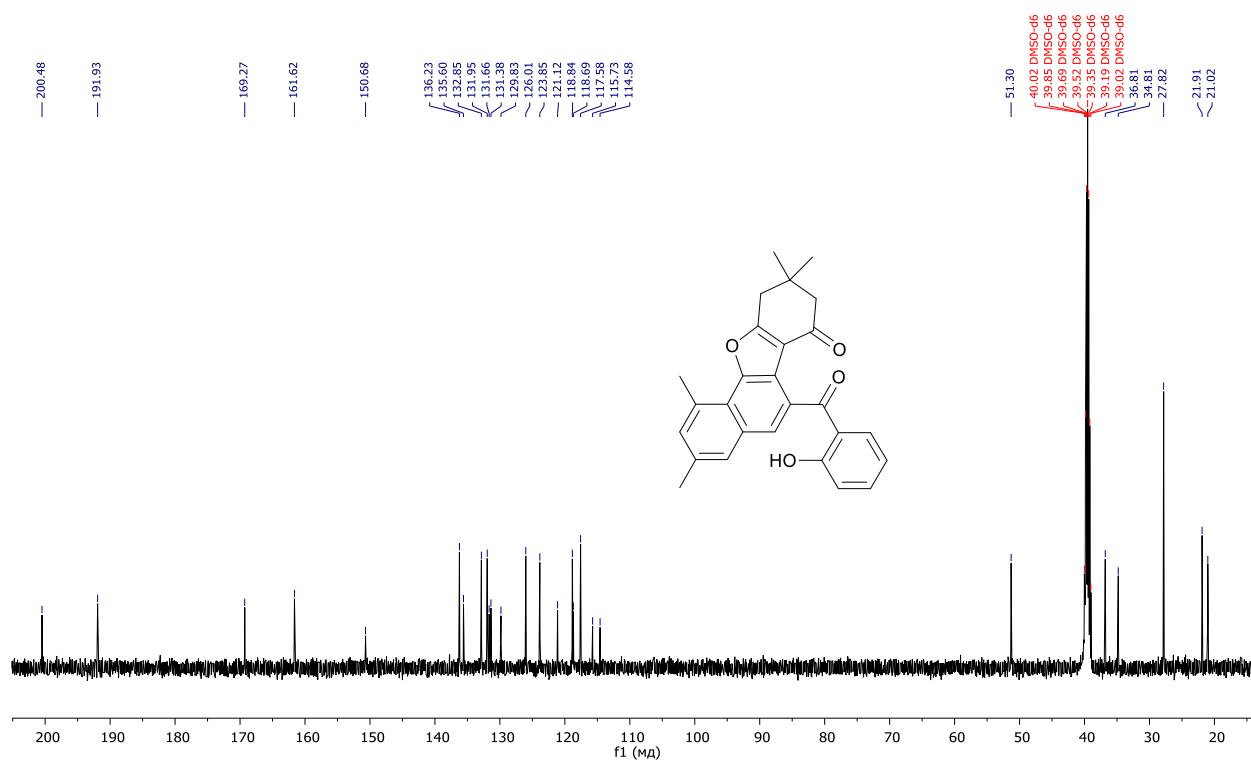
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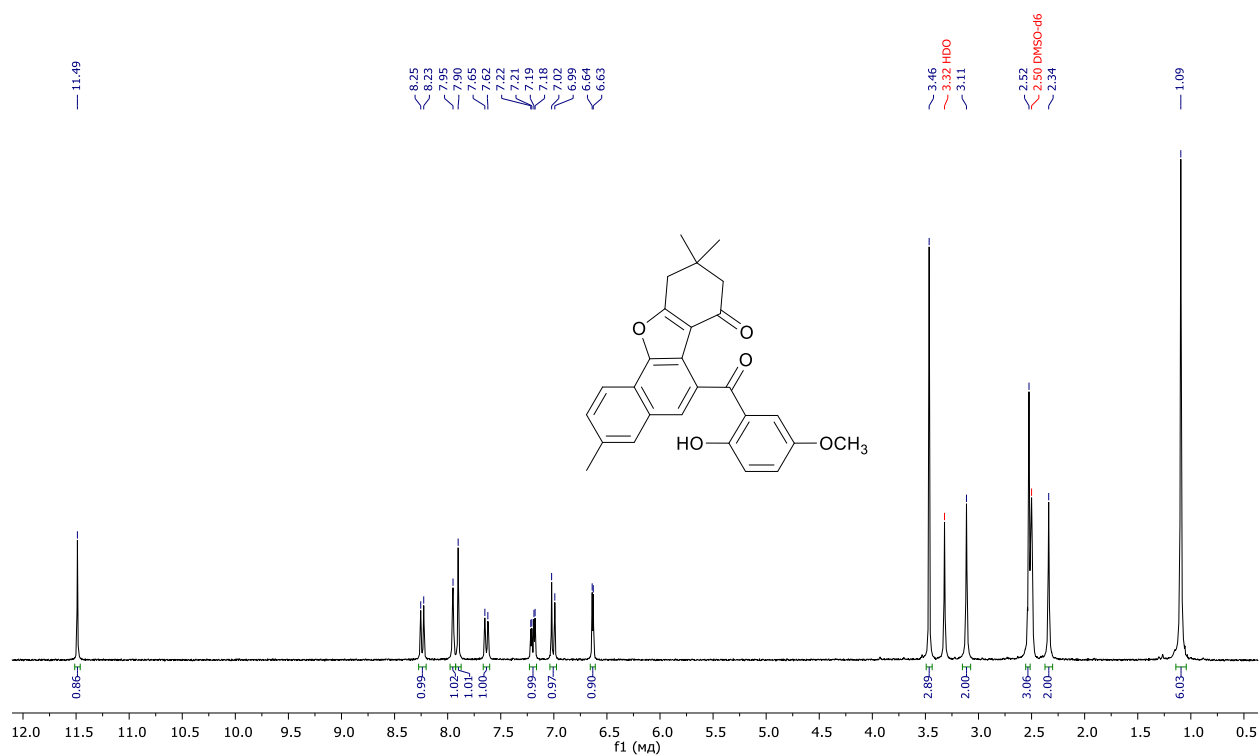
^1H NMR spectrum (300 MHz) of **5h** in $\text{DMSO}-d_6$



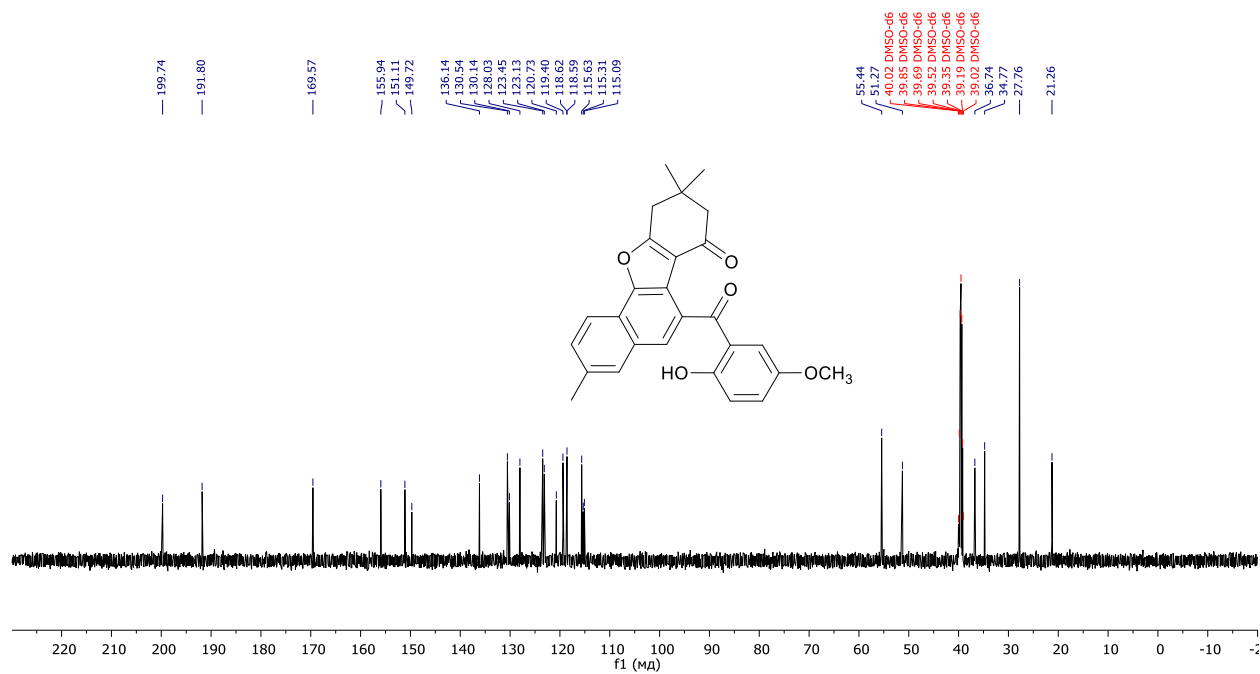
^{13}C NMR spectrum (126 MHz) of **5h** in $\text{DMSO}-d_6$



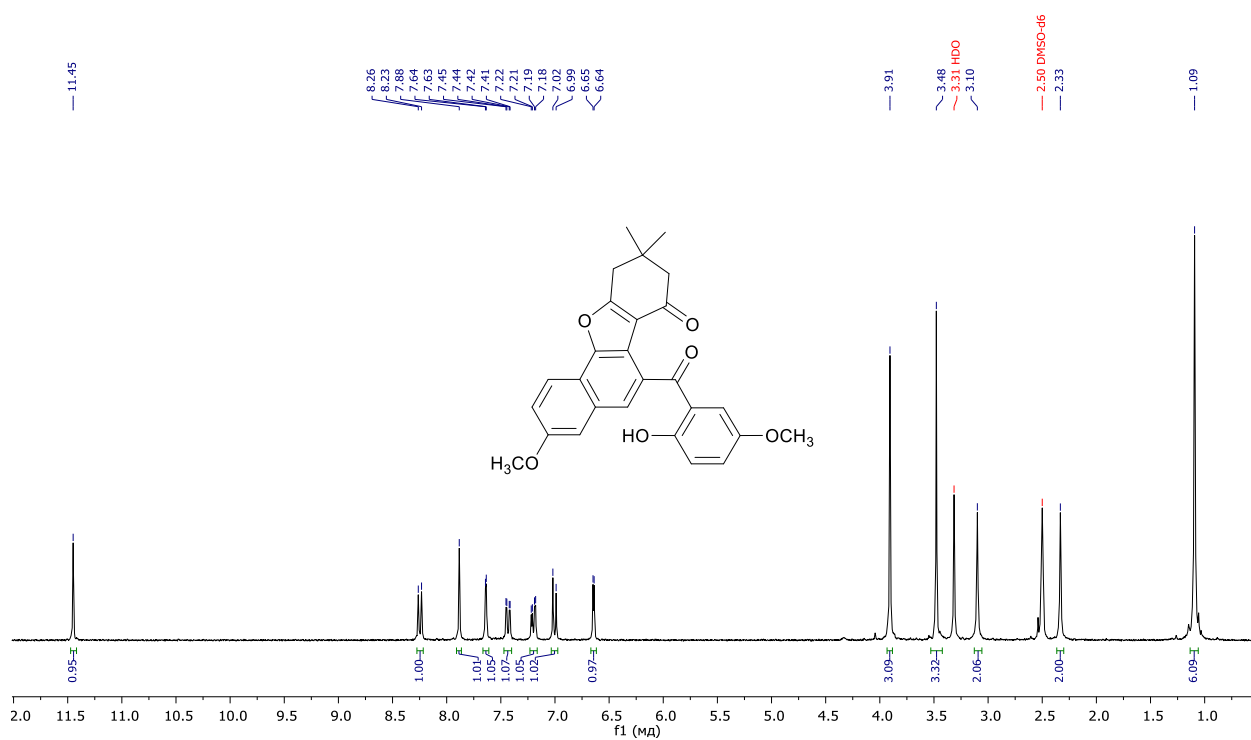
^1H NMR spectrum (300 MHz) of **5i** in $\text{DMSO-}d_6$



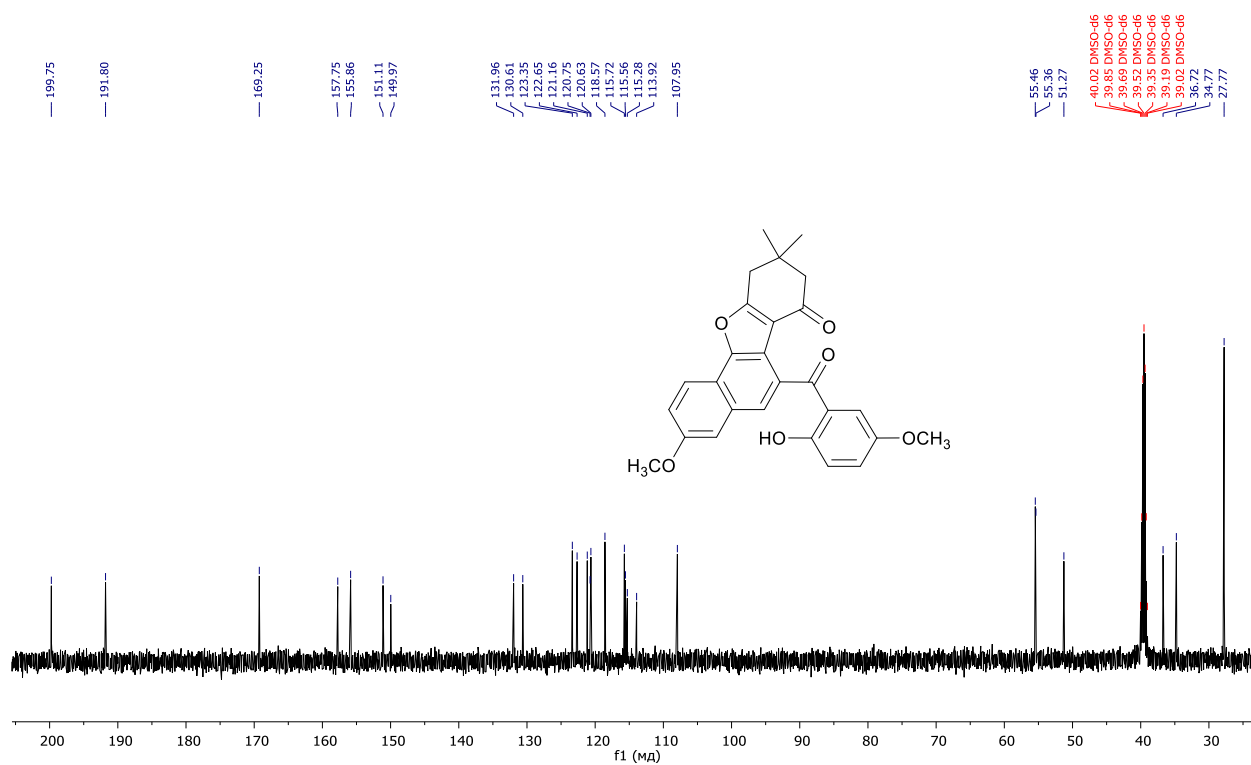
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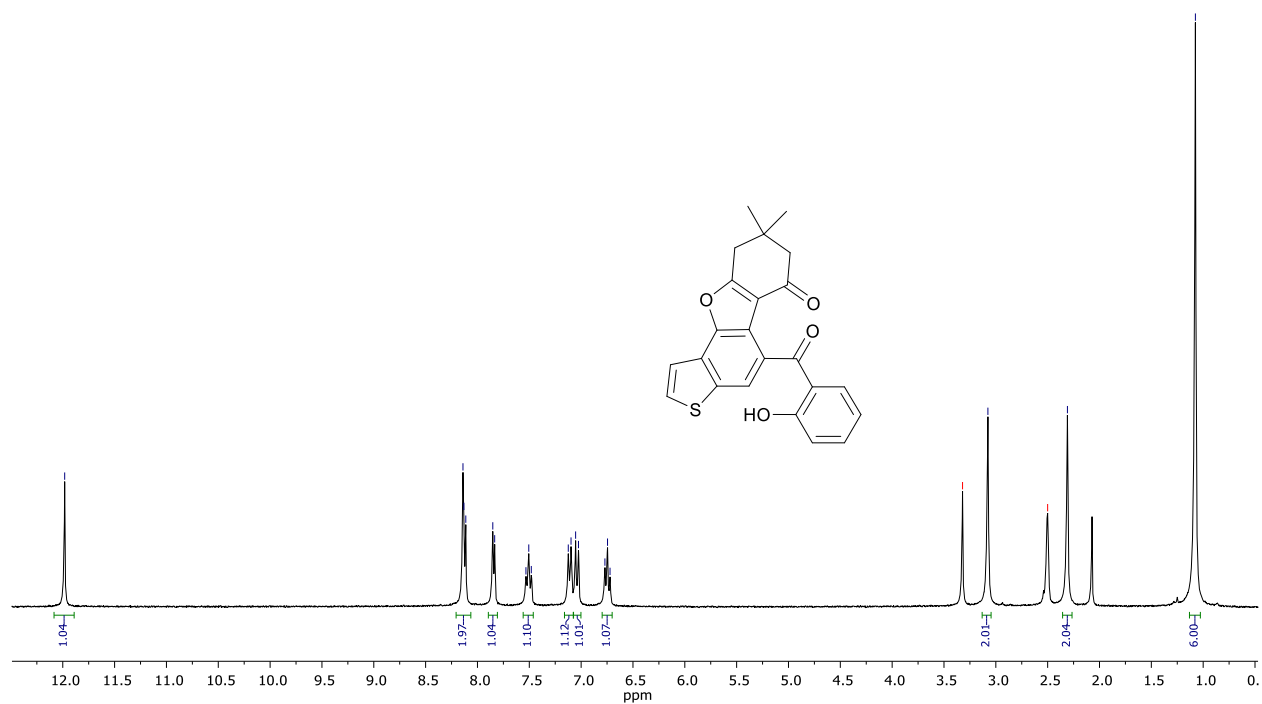
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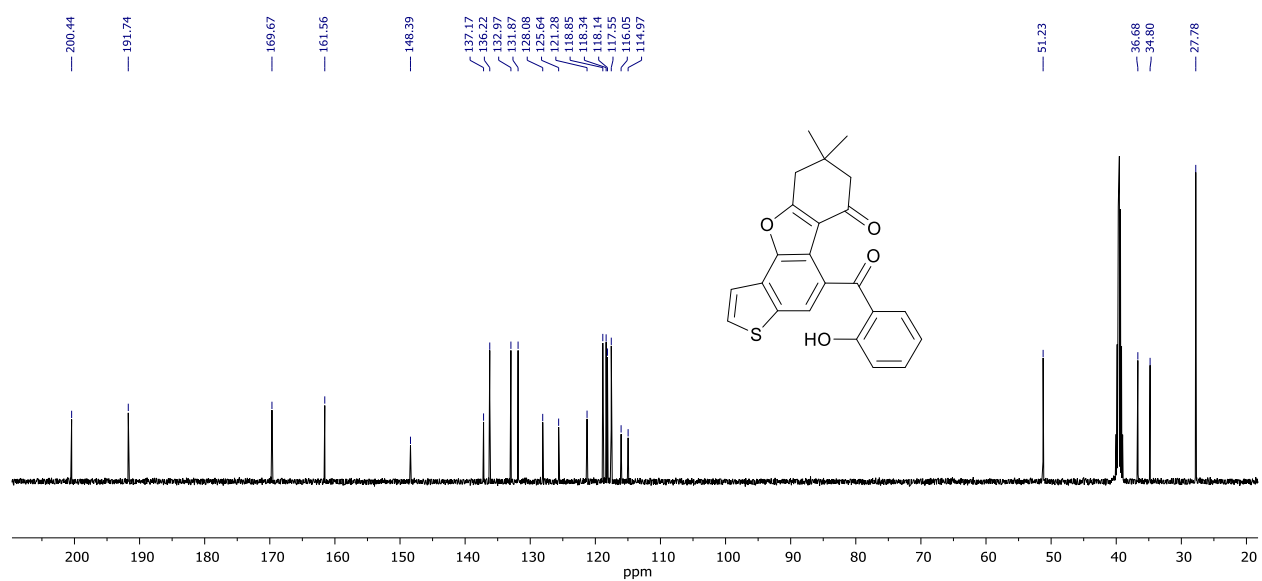
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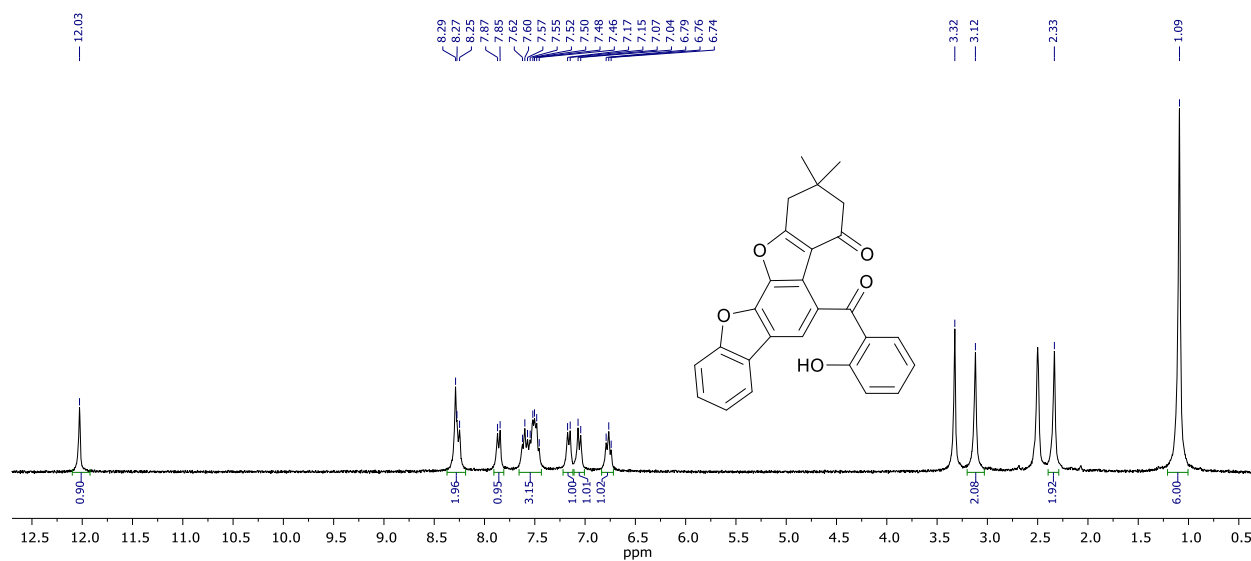
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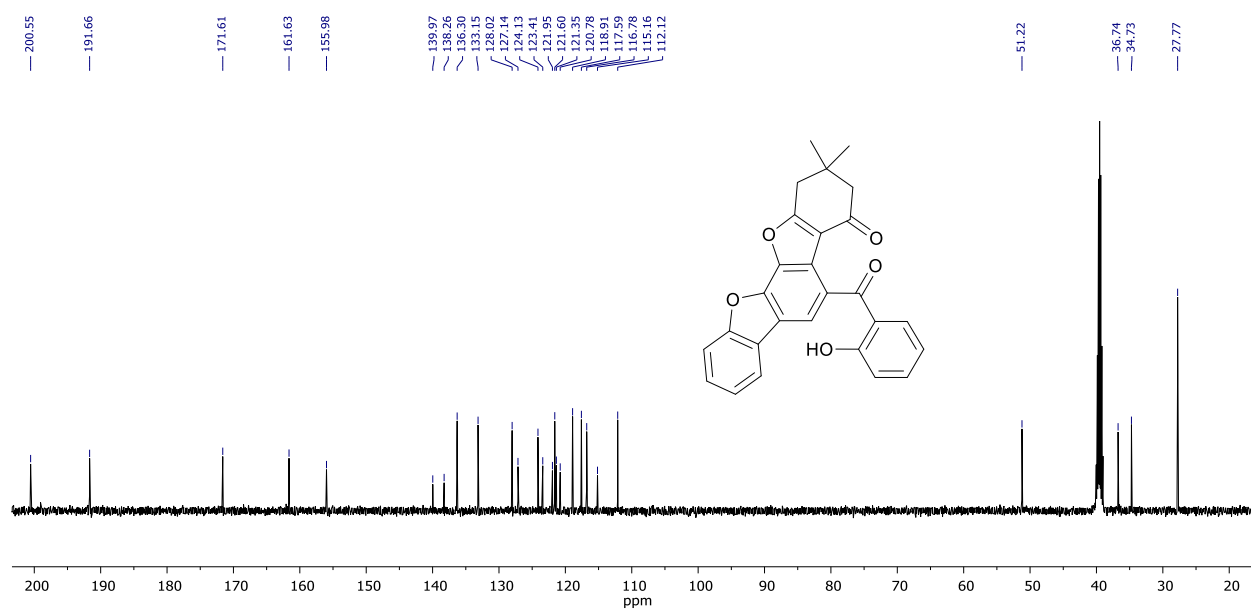
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^1H NMR spectrum (300 MHz) of **5I** in $\text{DMSO}-d_6$

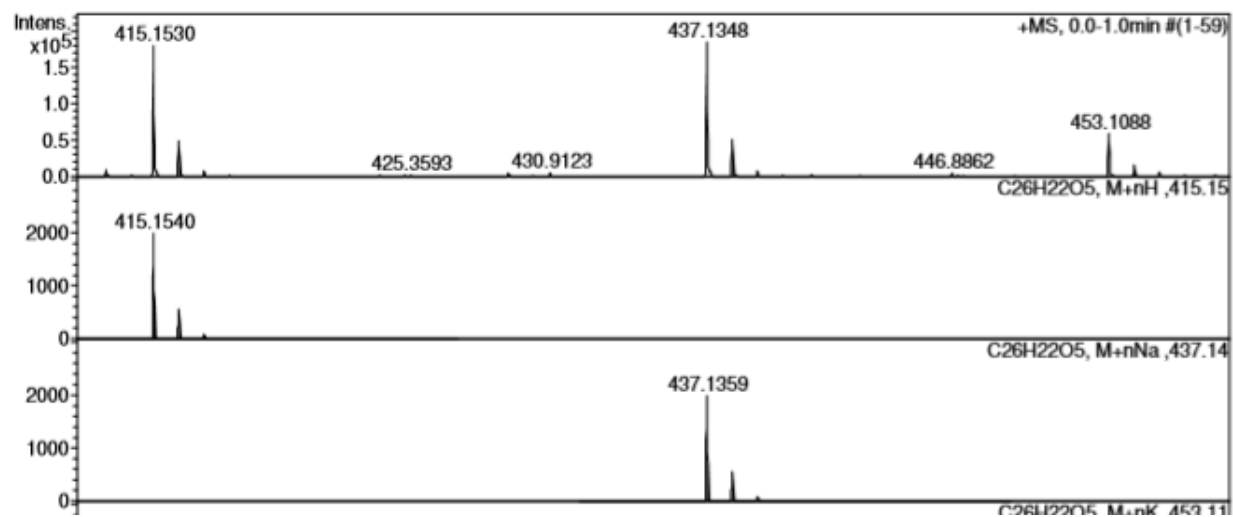


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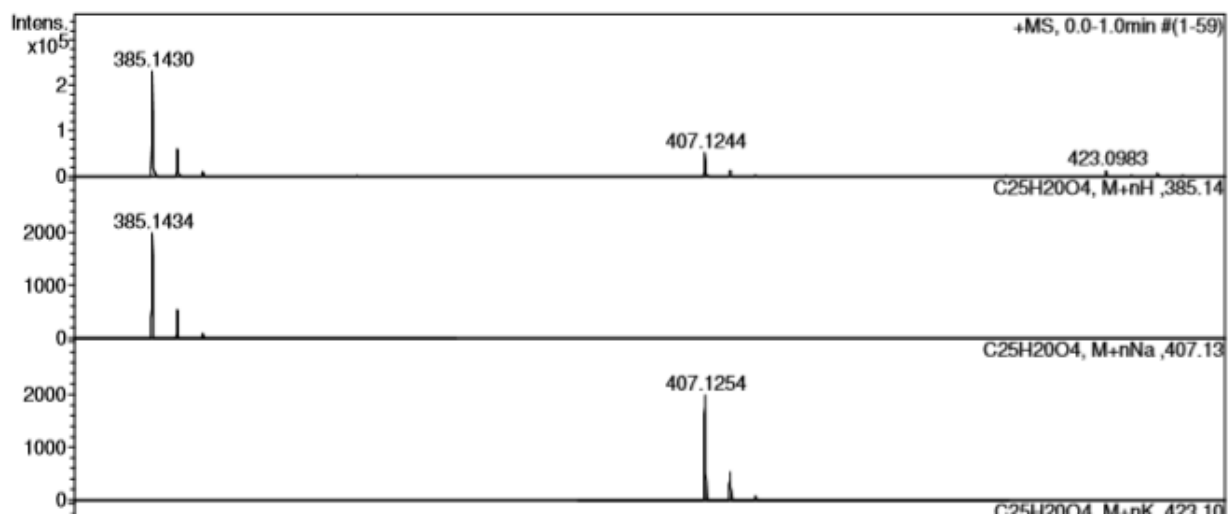


3. HRMS for all compounds.

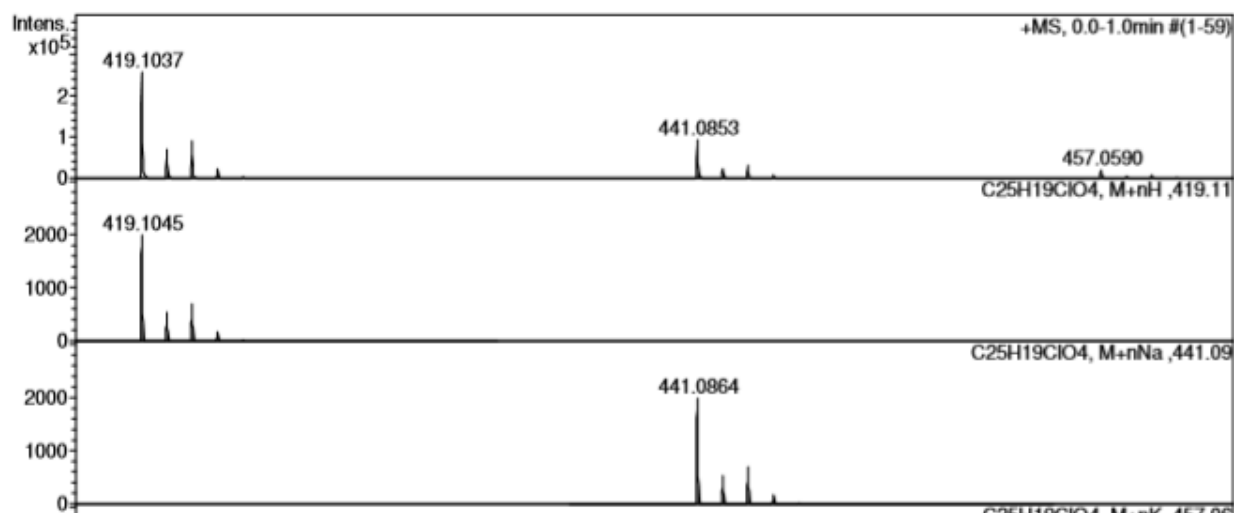
HRMS for **1a**



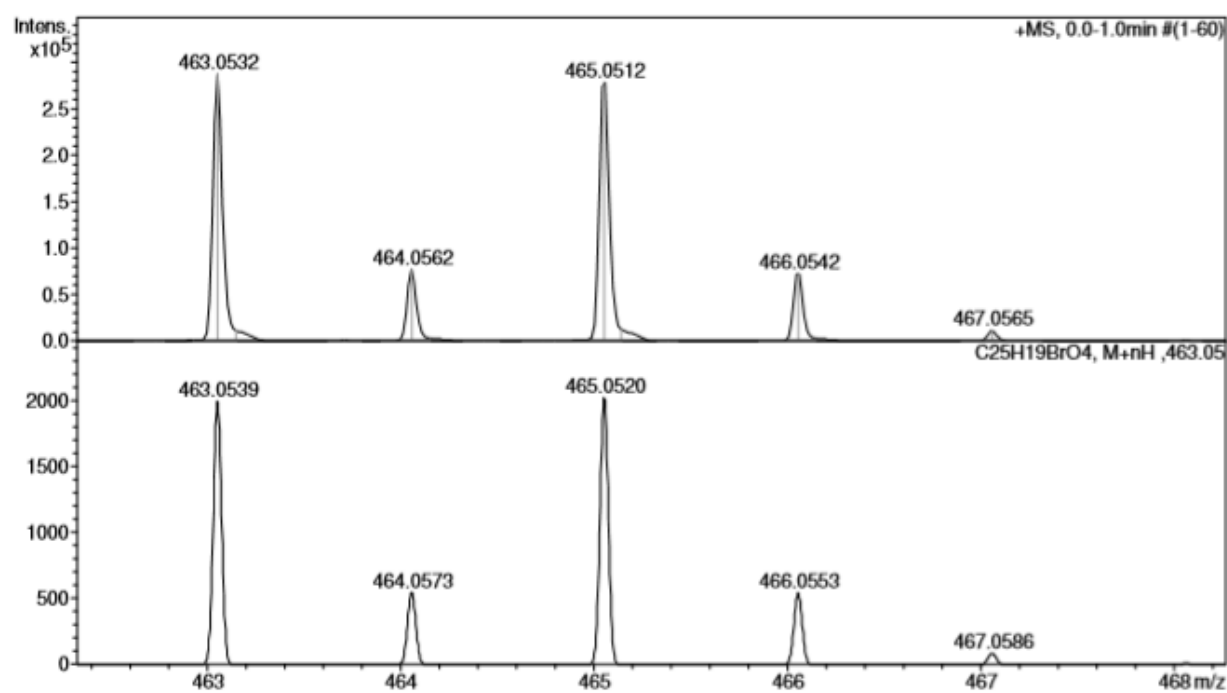
HRMS for **1b**



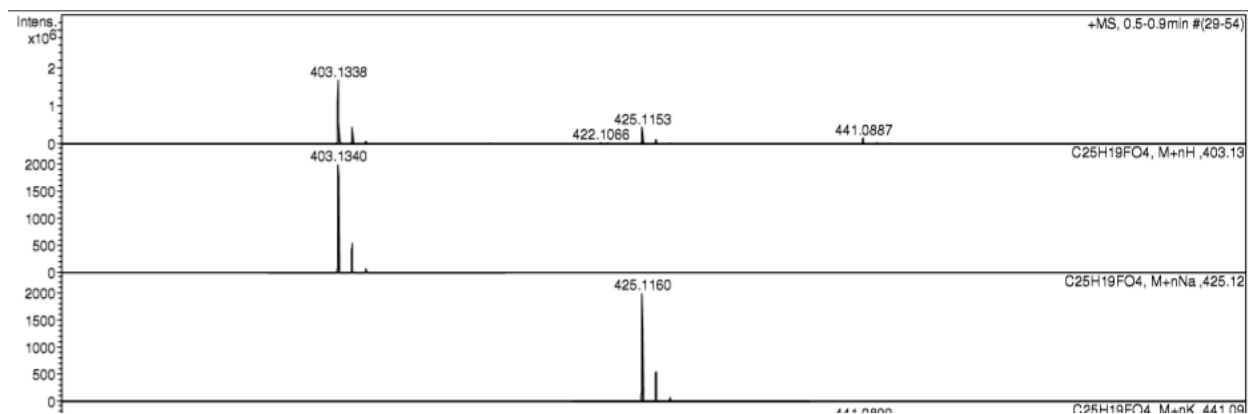
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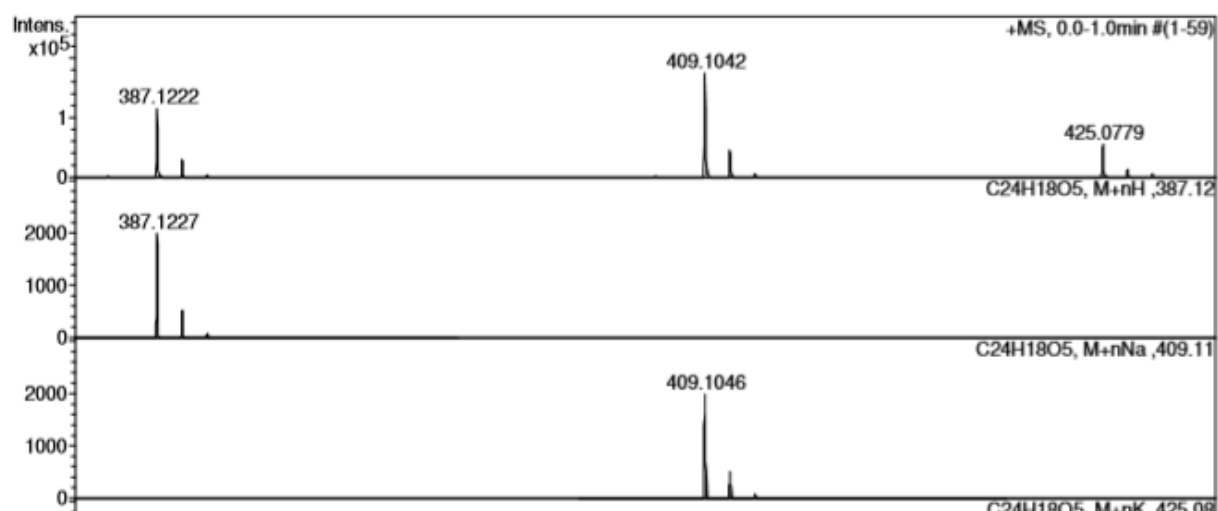
HRMS for **1d**



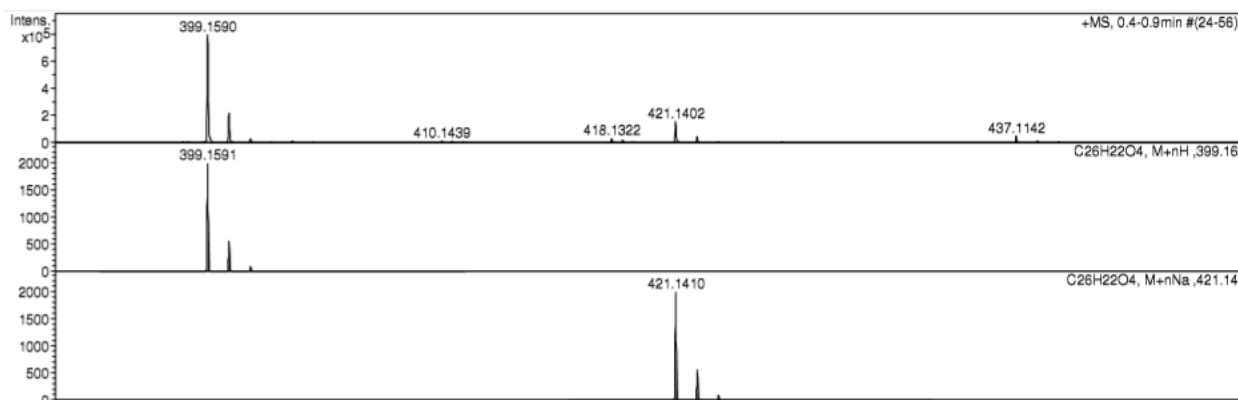
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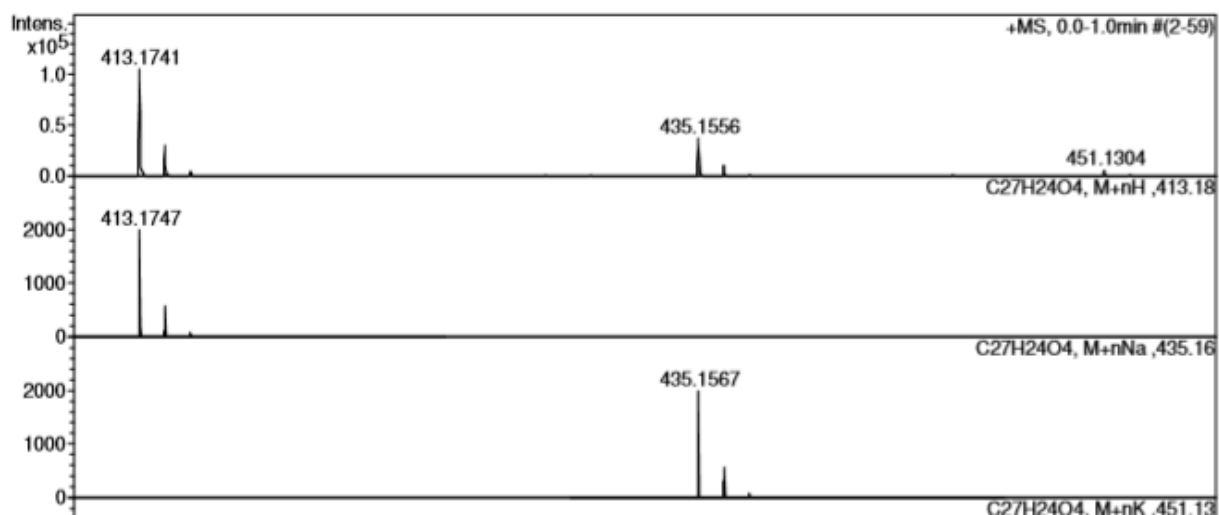
HRMS for **1f**



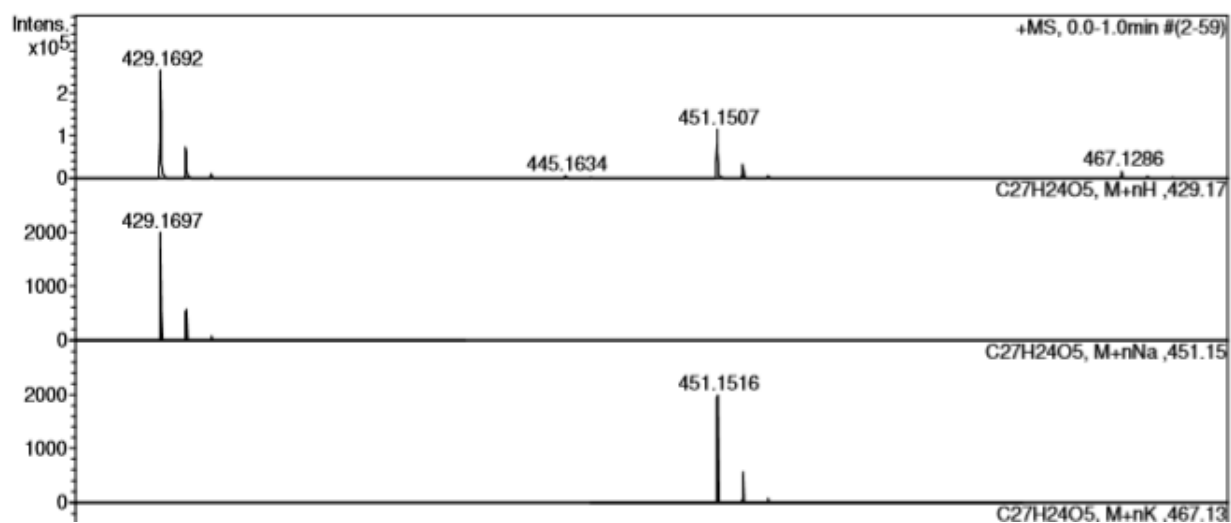
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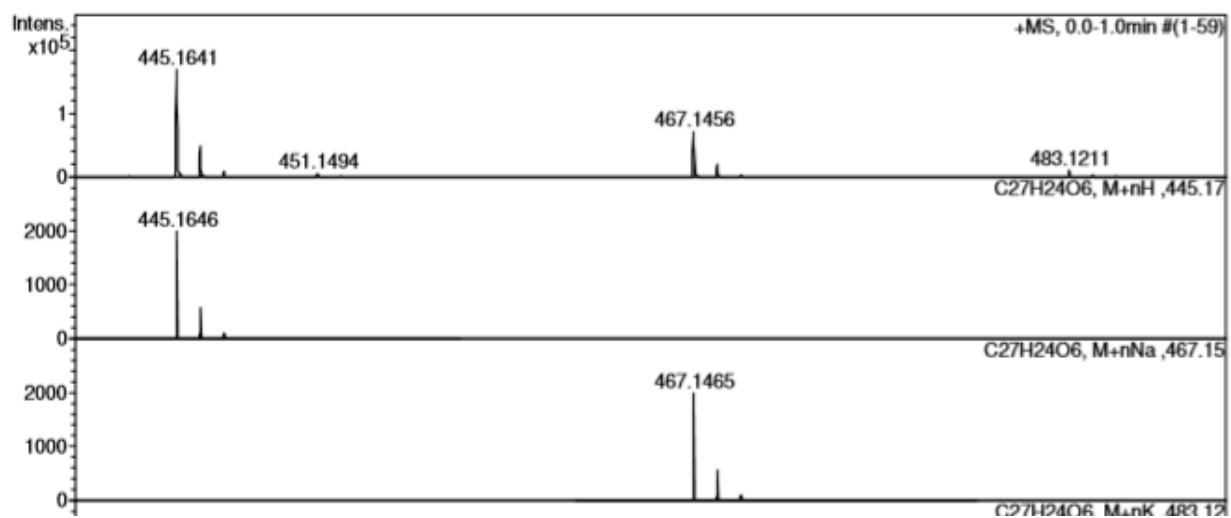
HRMS for **1h**



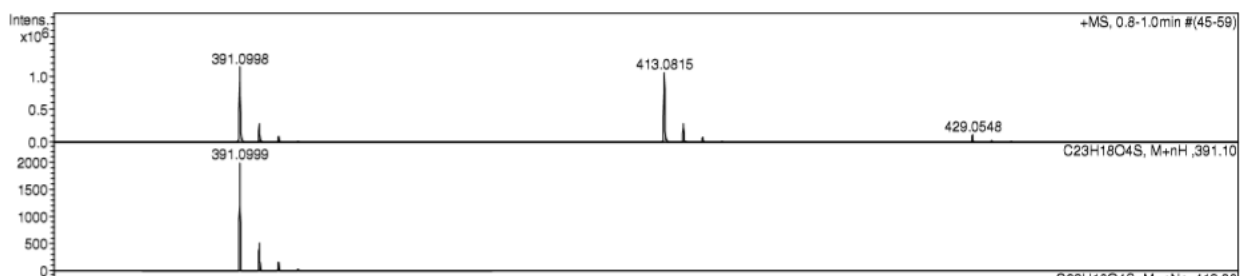
HRMS for **1i**



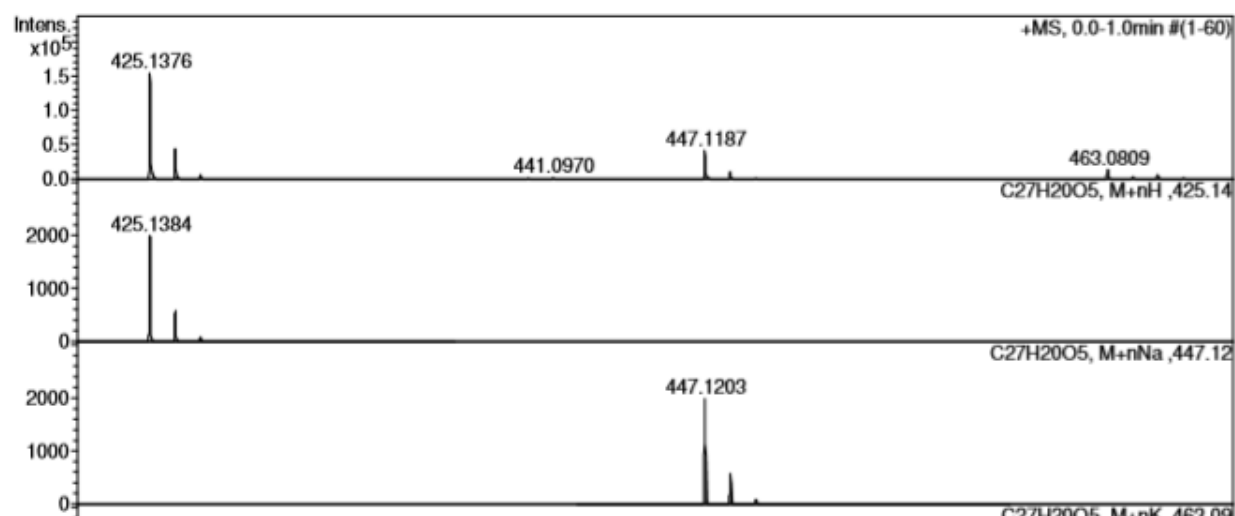
HRMS for **1j**



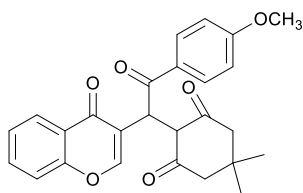
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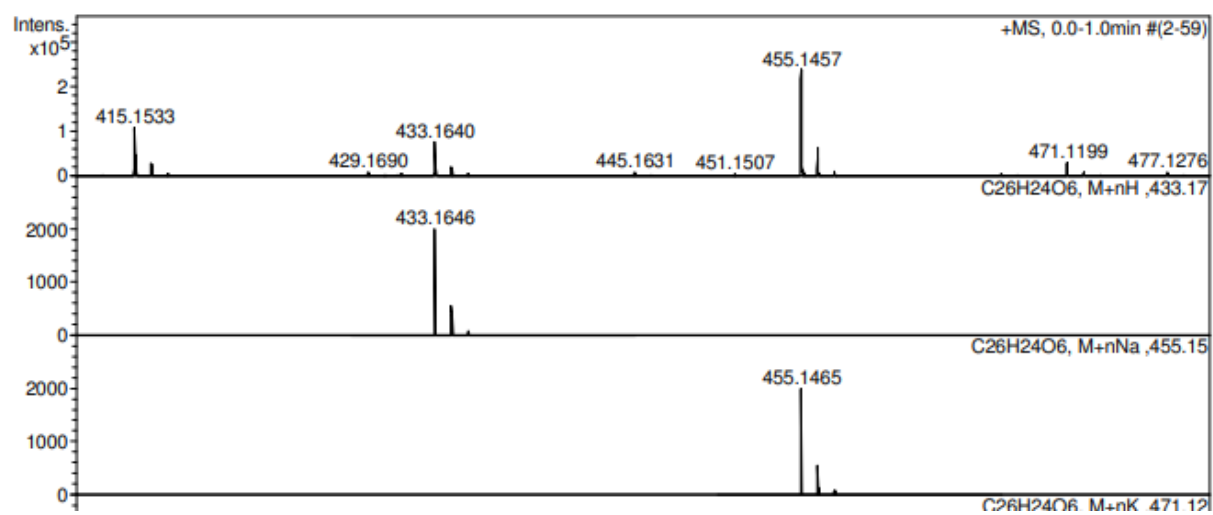
HRMS for **11**



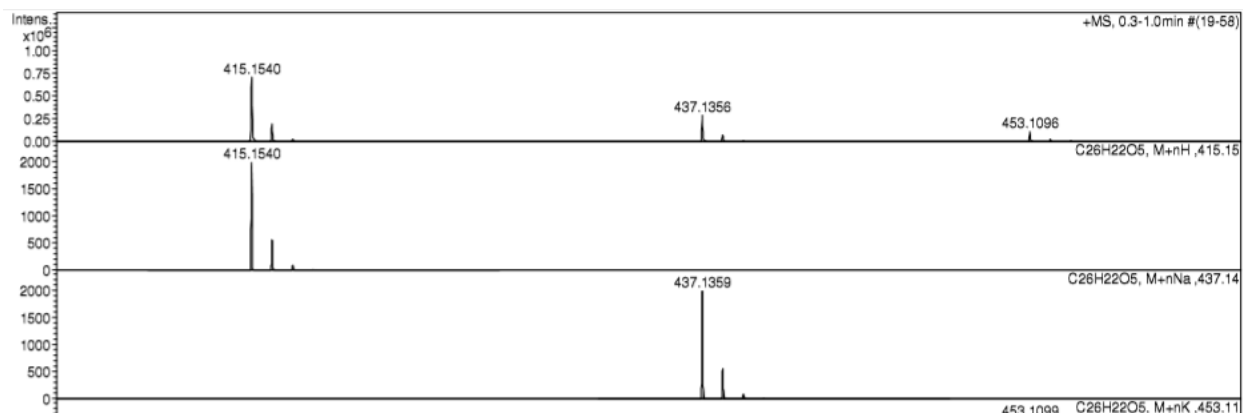
HRMS for intermediate **C**



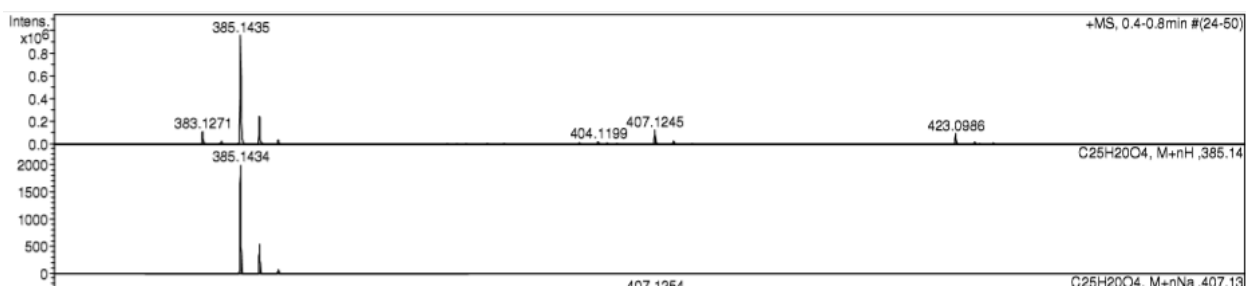
Chemical Formula: C₂₆H₂₄O₆



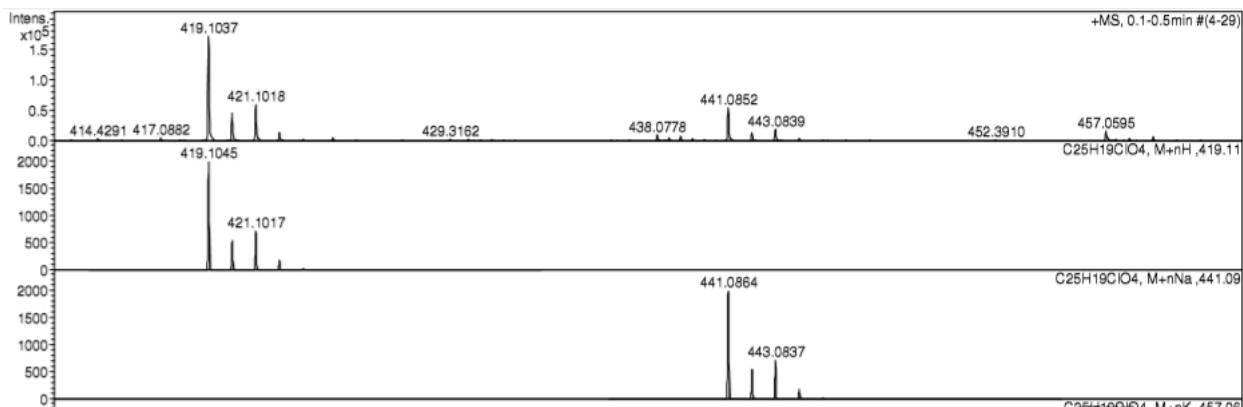
HRMS for 5a



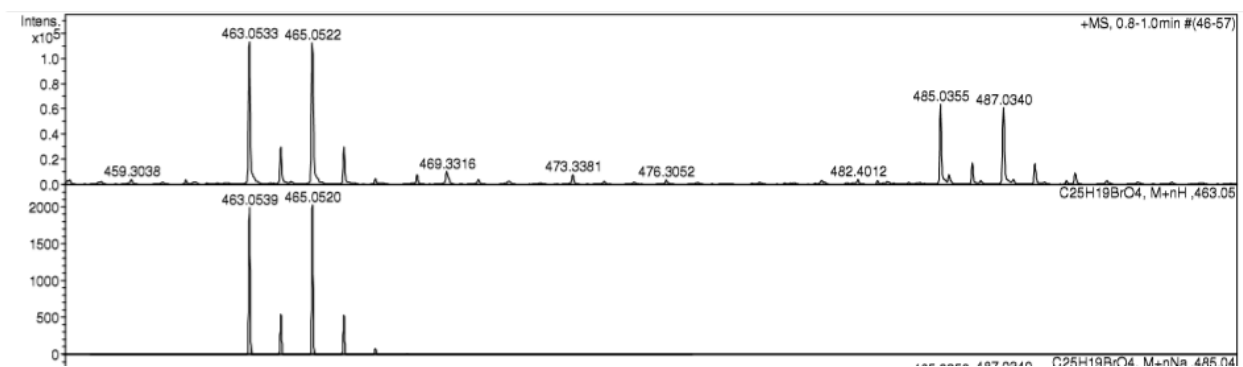
HRMS for 5b



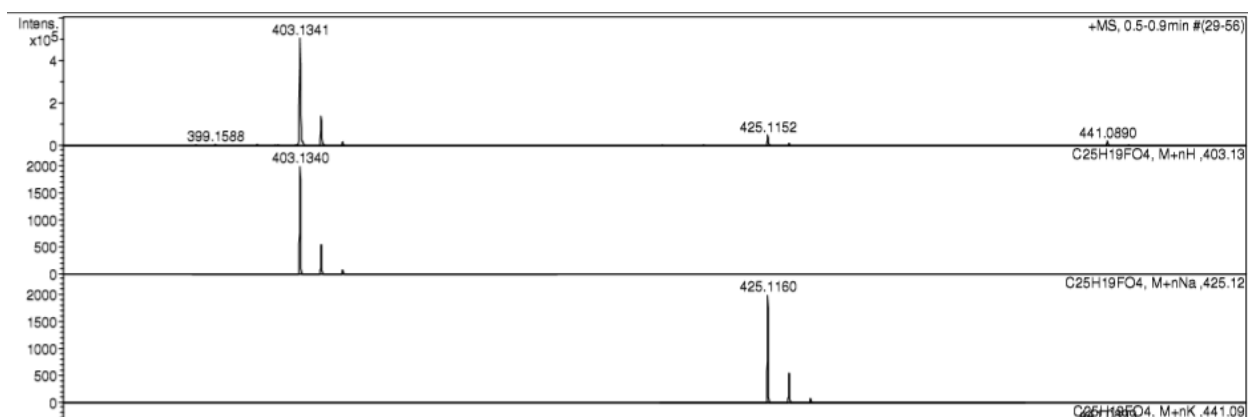
HRMS for 5c



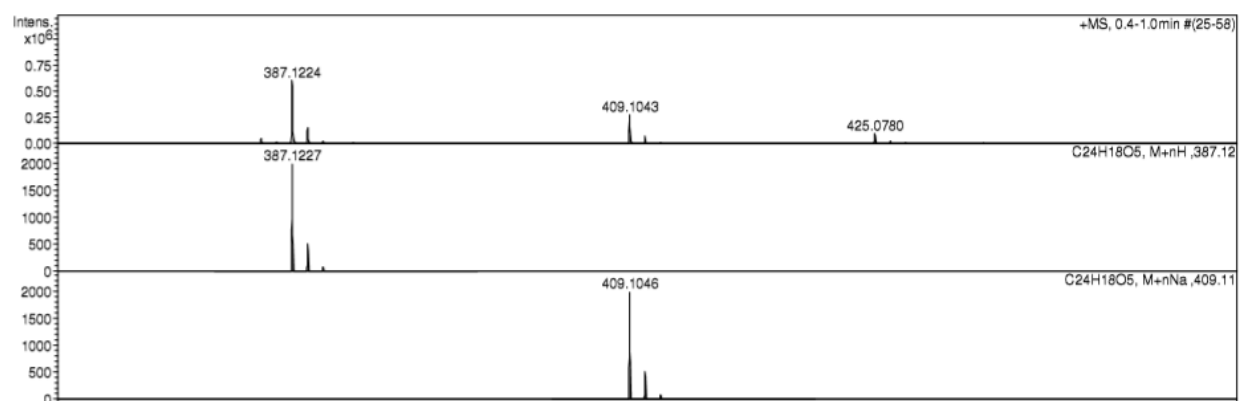
HRMS for 5d



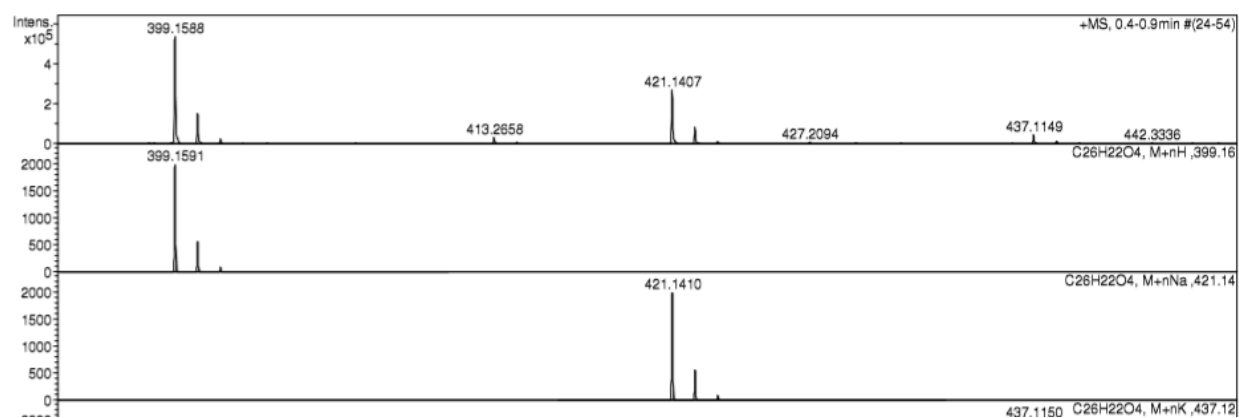
HRMS for 5e



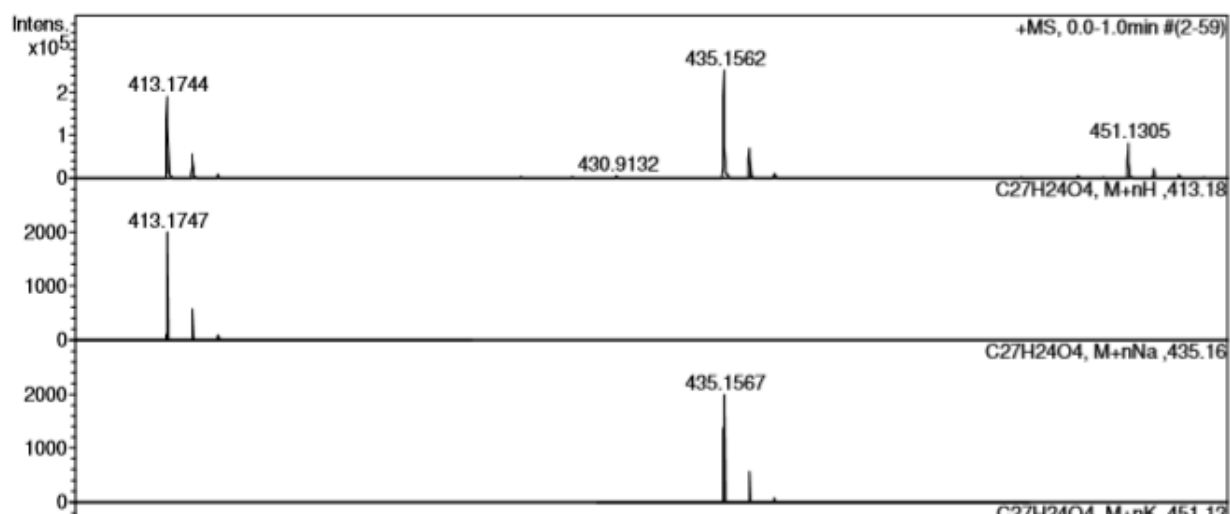
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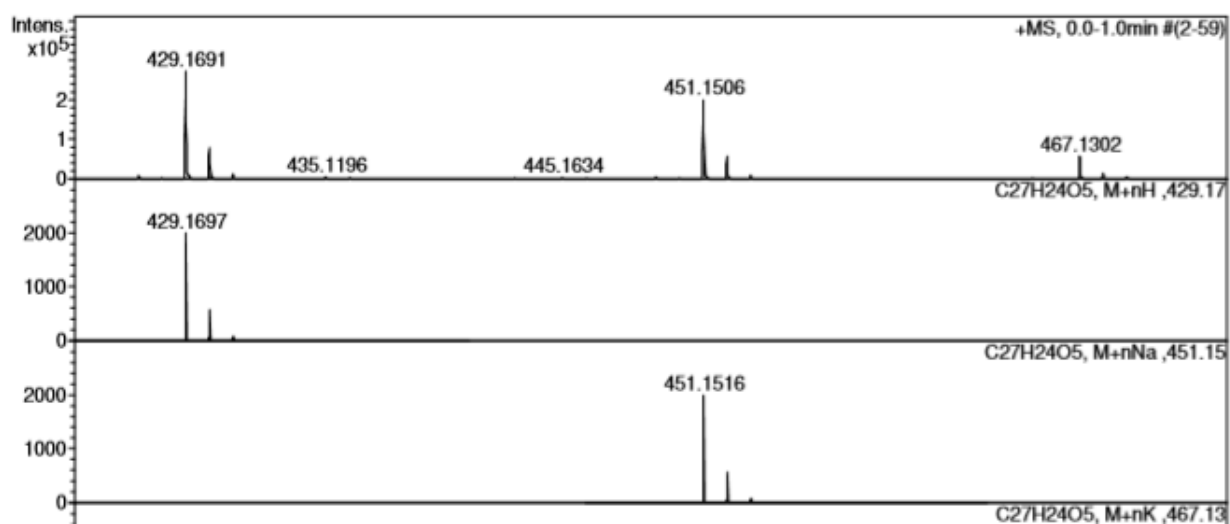
HRMS for 5g



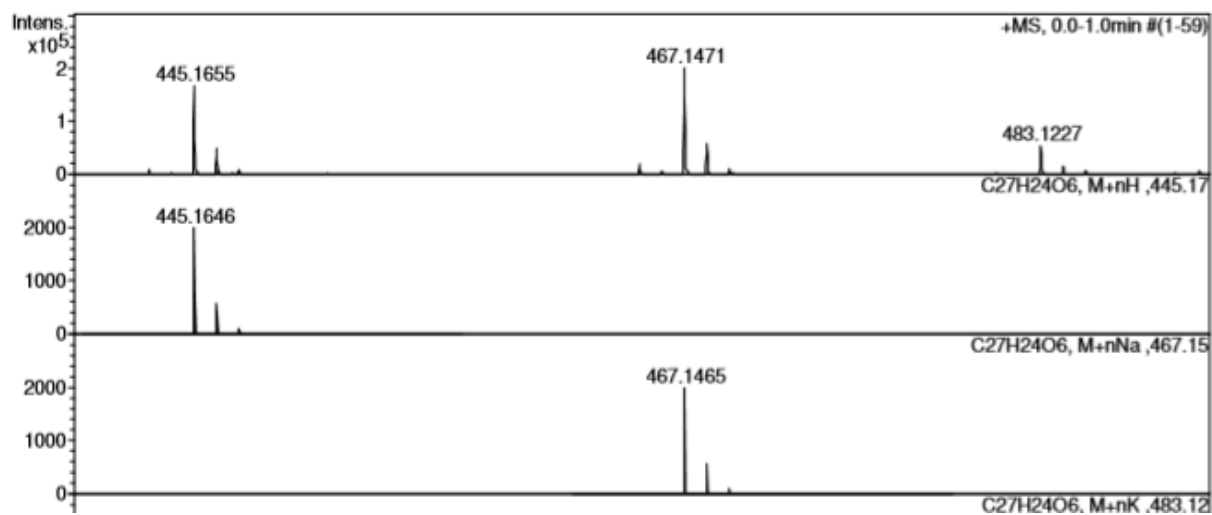
HRMS for **5h**



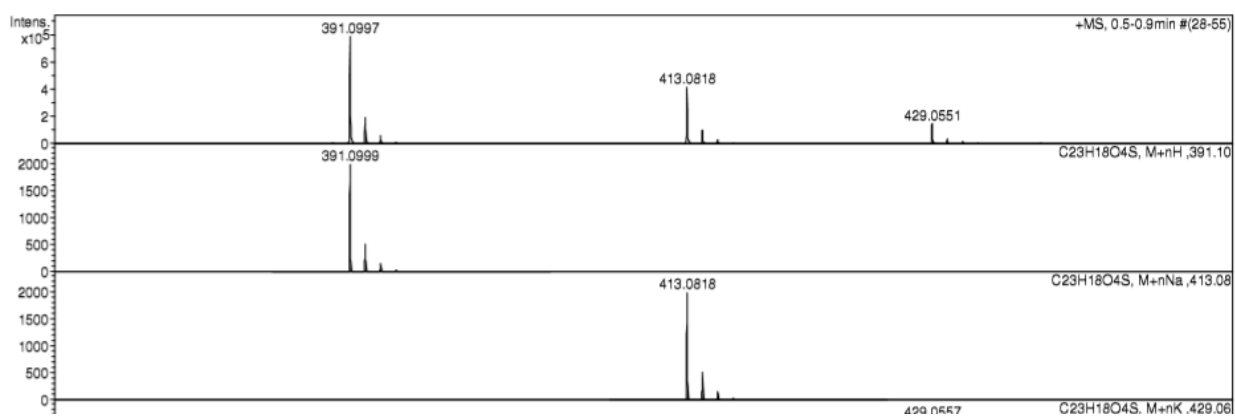
HRMS for **5i**



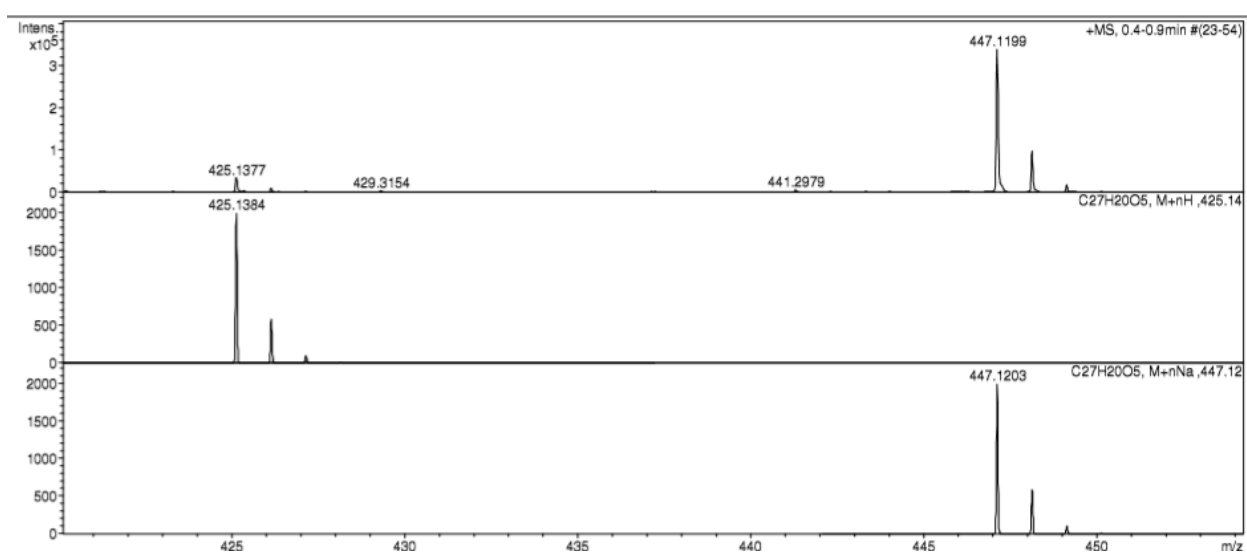
HRMS for **5j**



HRMS for **5k**



HRMS for **5l**



4. Photochemical setup.

