

Supplementary Material

One-pot synthesis of 5H-chromeno[3,4-b]pyrazin-5-one derivatives from 4-amino-3-nitrocoumarin and α -dicarbonyl compounds

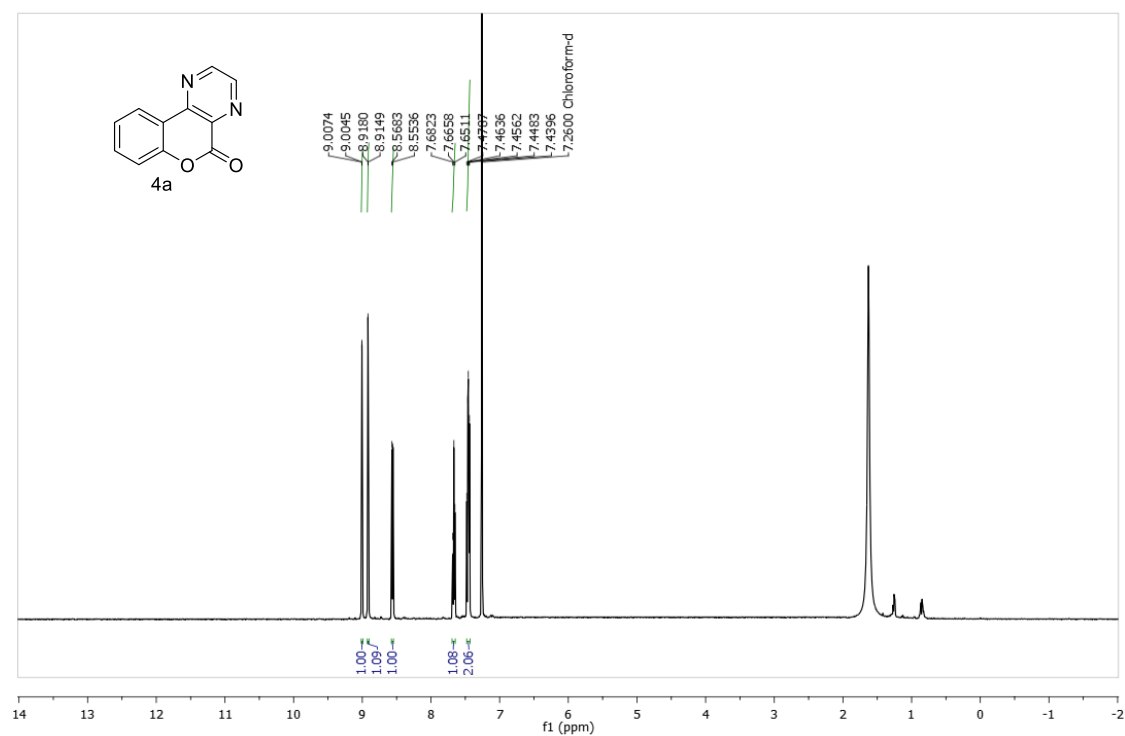
Matina D. Douka, Konstantinos E. Litinas

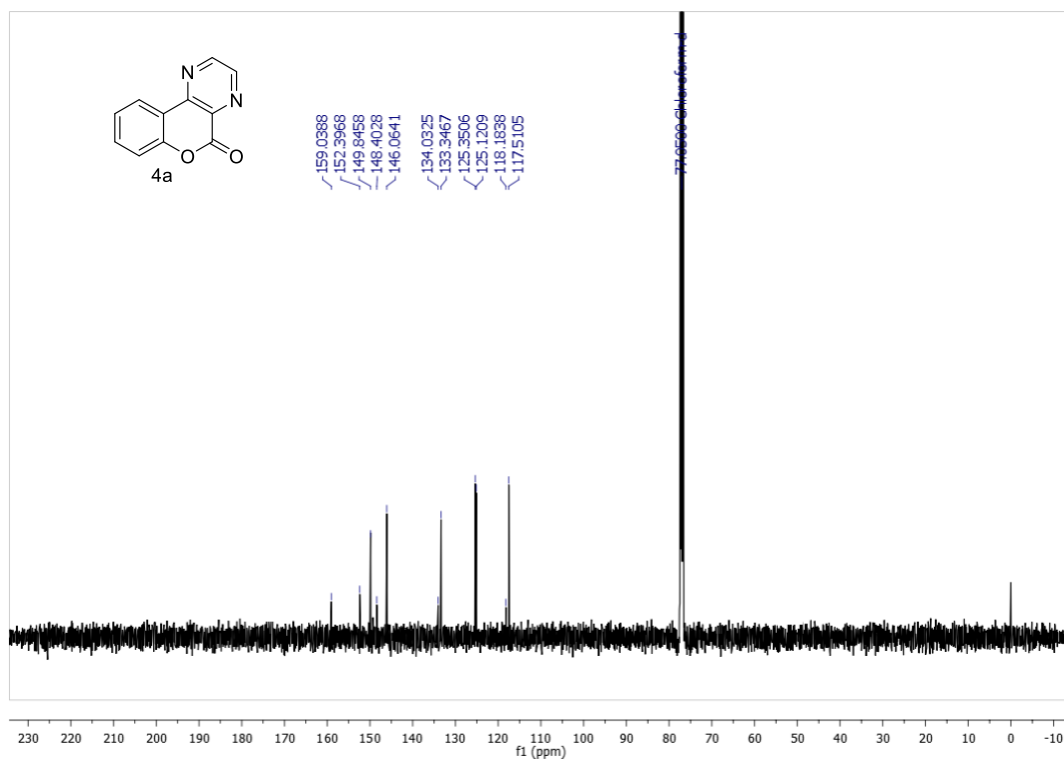
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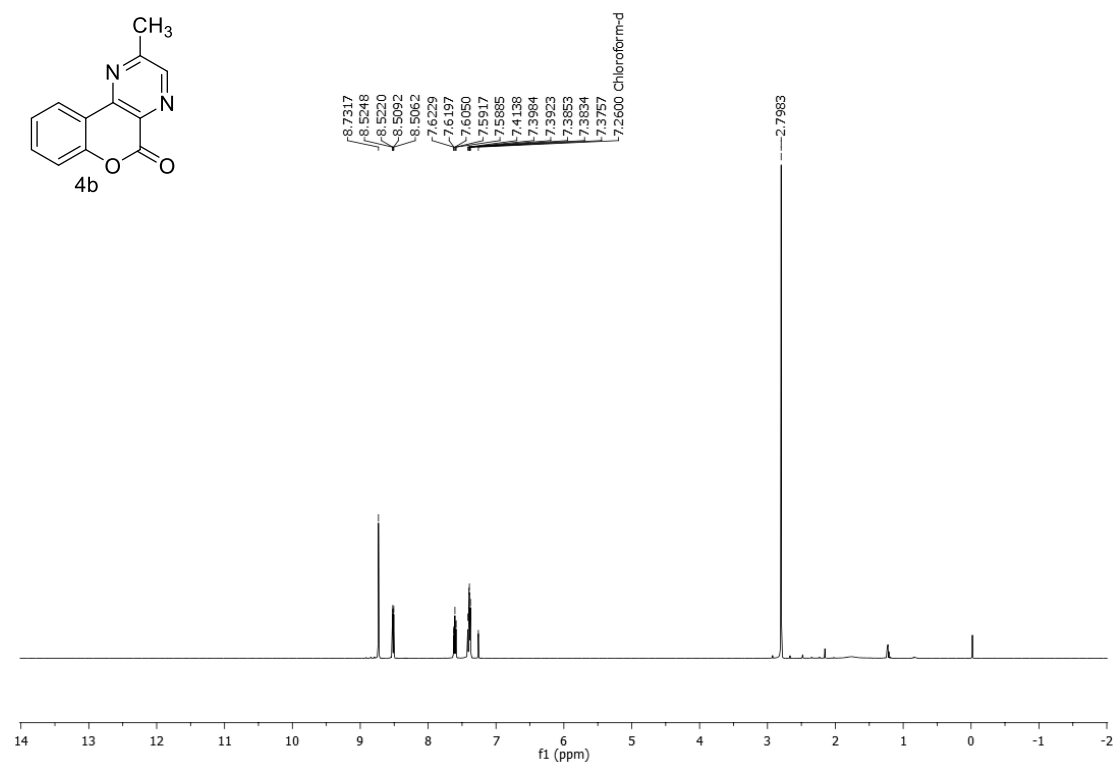
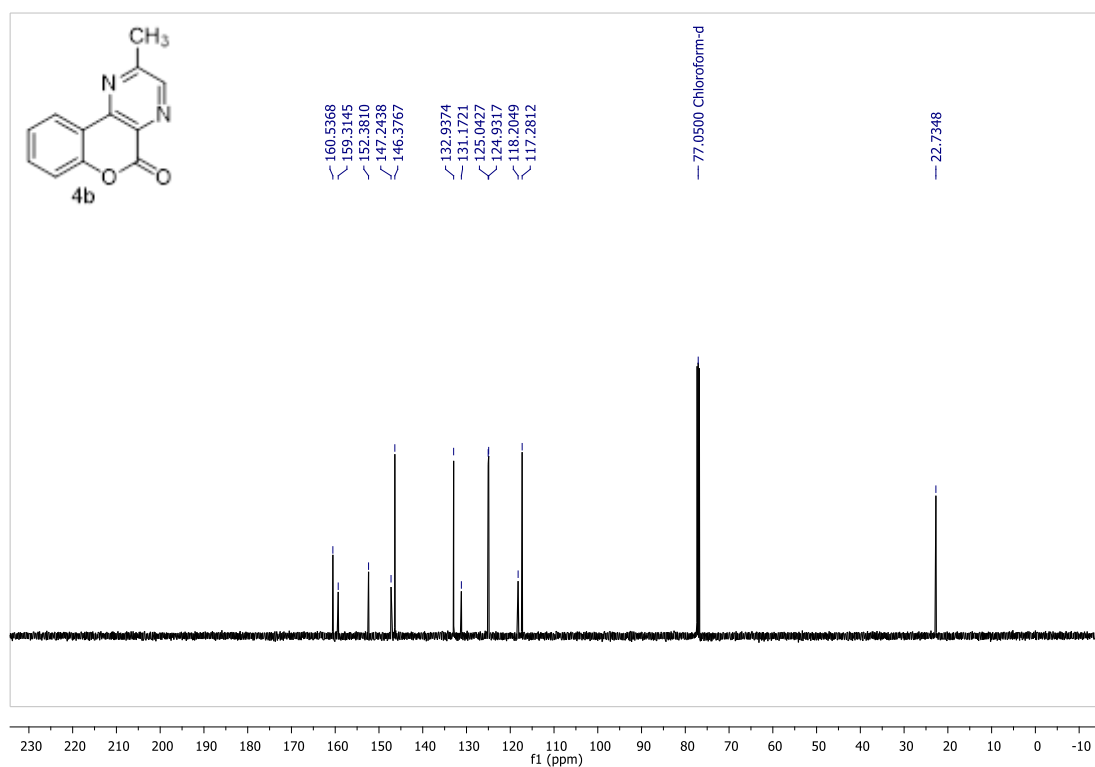
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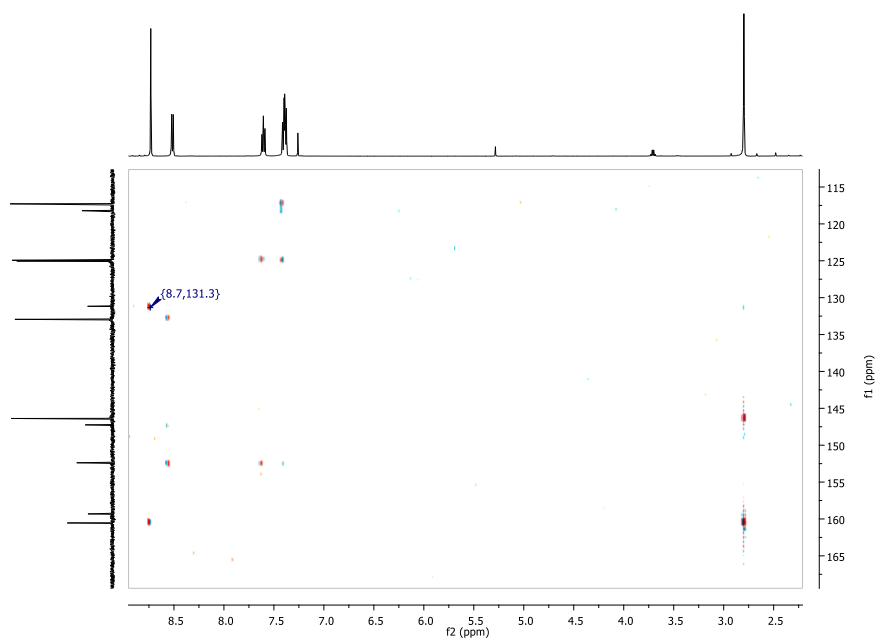
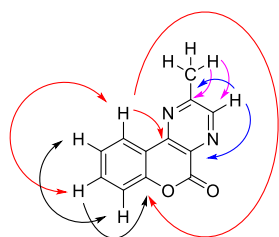
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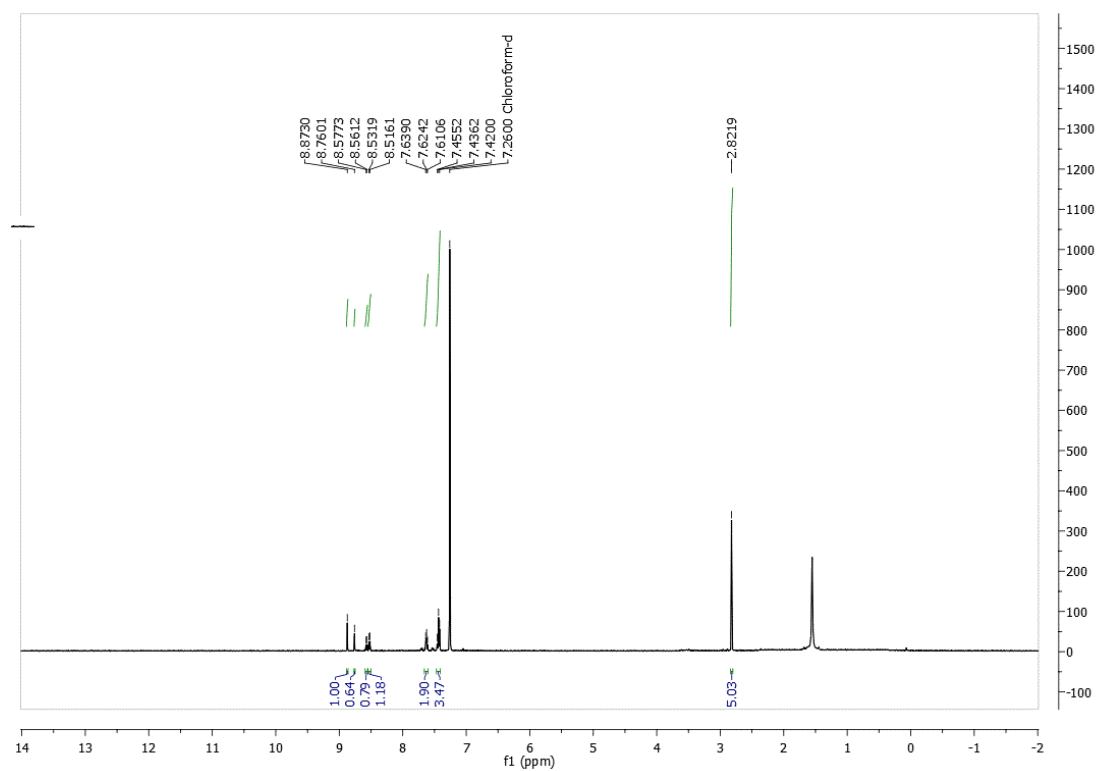
5*H*-Chromeno[3,4-*b*]-pyrazin-5-one (**4a**)¹H-NMR Spectrum of compound **4a**.

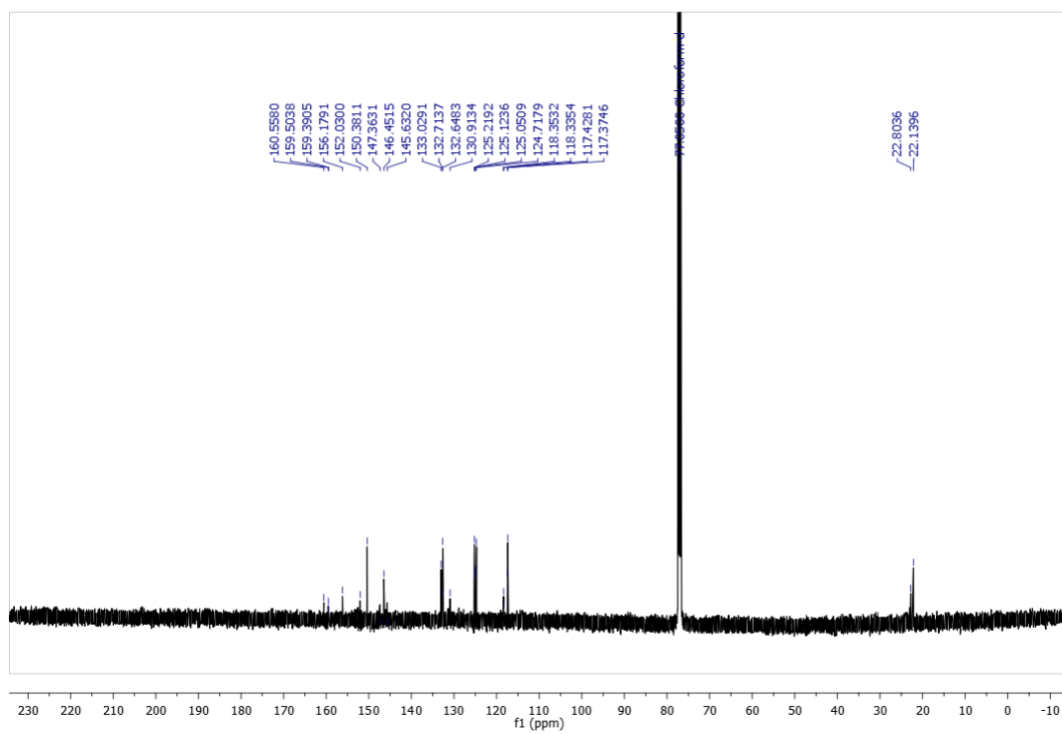


¹³C-NMR Spectrum of compound **4a**.

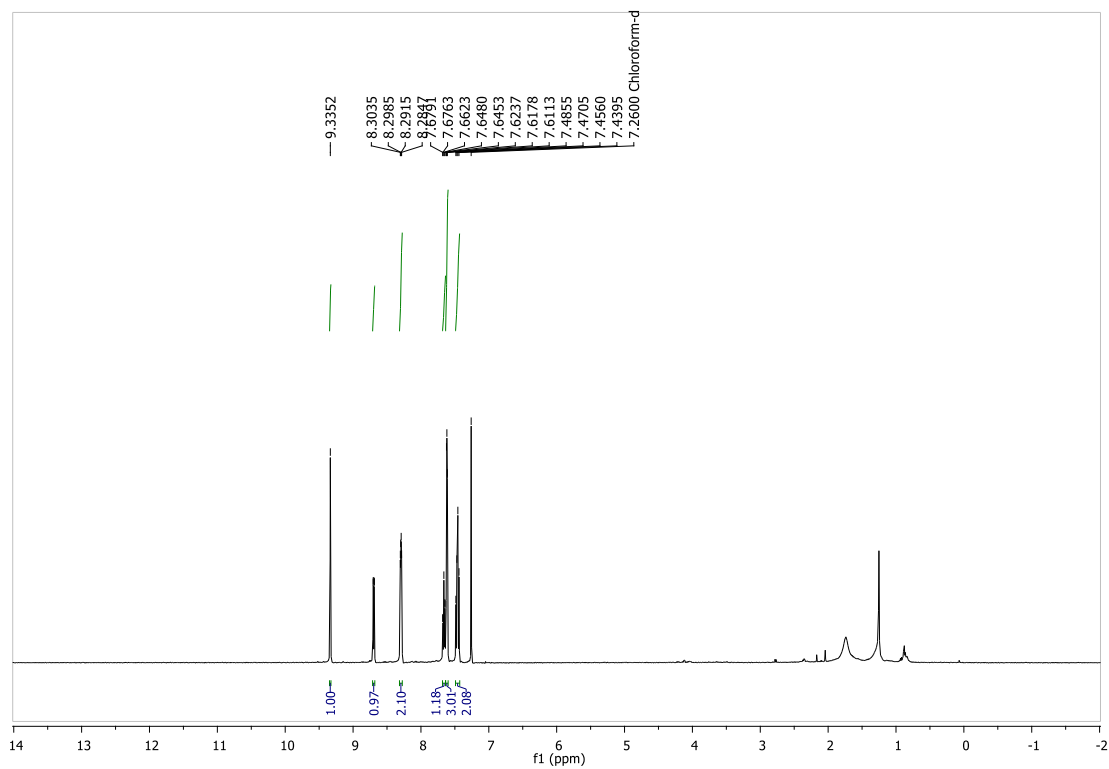
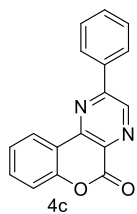
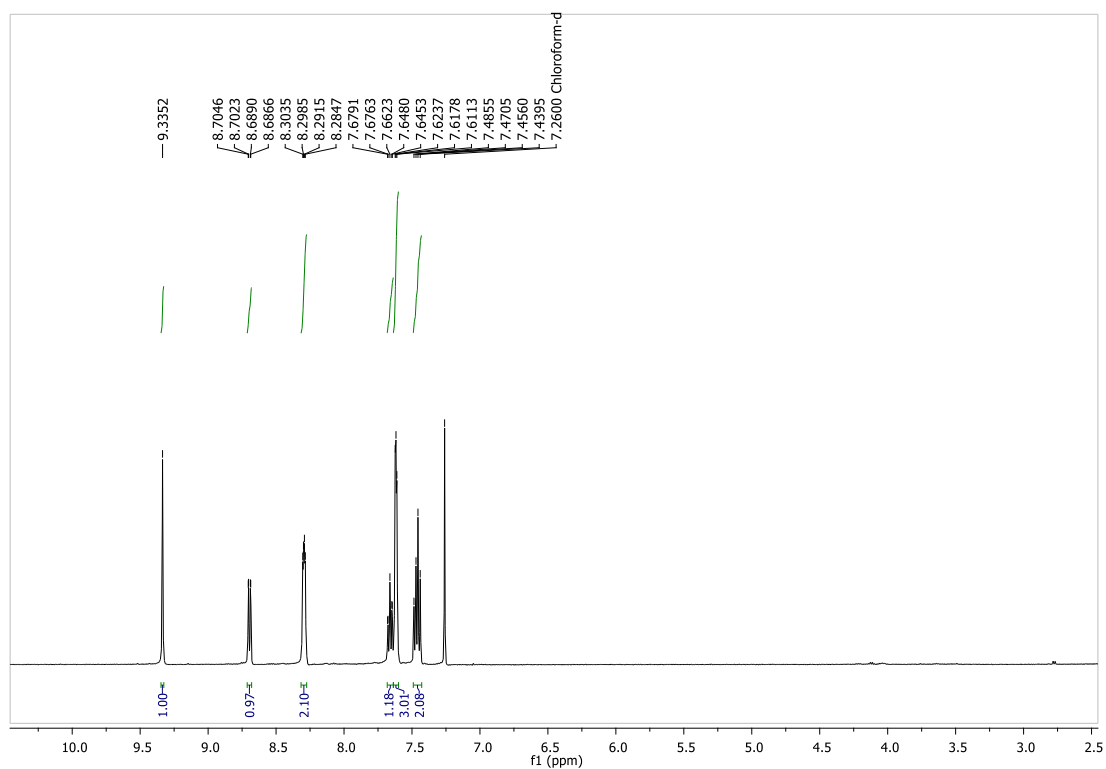
2-Methyl-5*H*-chromeno[3,4-*b*]-pyrazin-5-one (**4b**)¹H-NMR Spectrum of compound **4b**.¹³C-NMR Spectrum of compound **4b**

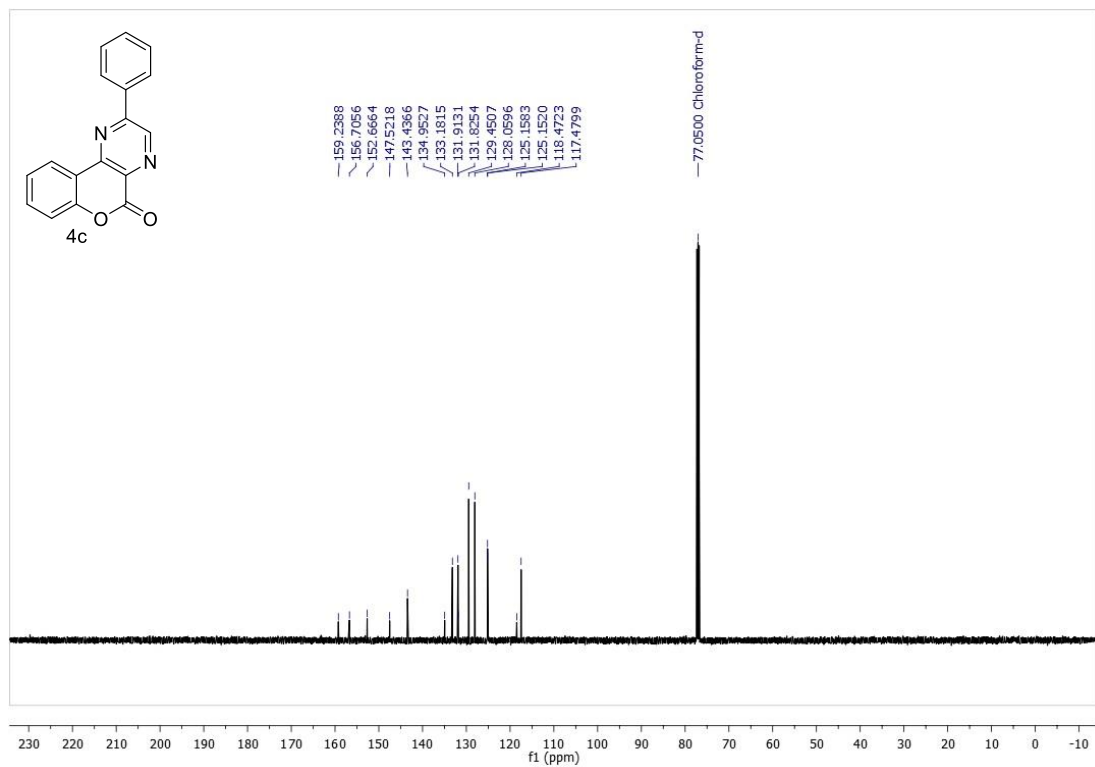
HMBC Spectrum of compound **4b**.

Mixture of 3-methyl-5*H*-chromeno[3,4-*b*]pyrazin-5-one (**5b**) and **4b**¹H-NMR Spectrum of the mixture of compounds **4b** and **5b**.

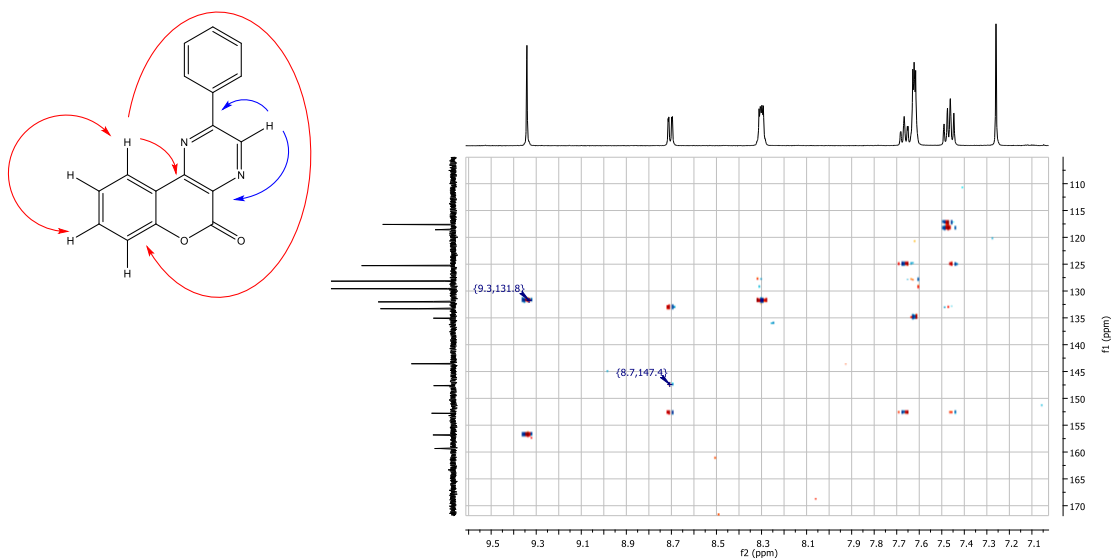


¹³C-NMR Spectrum of the mixture of compounds **4b** and **5b**.

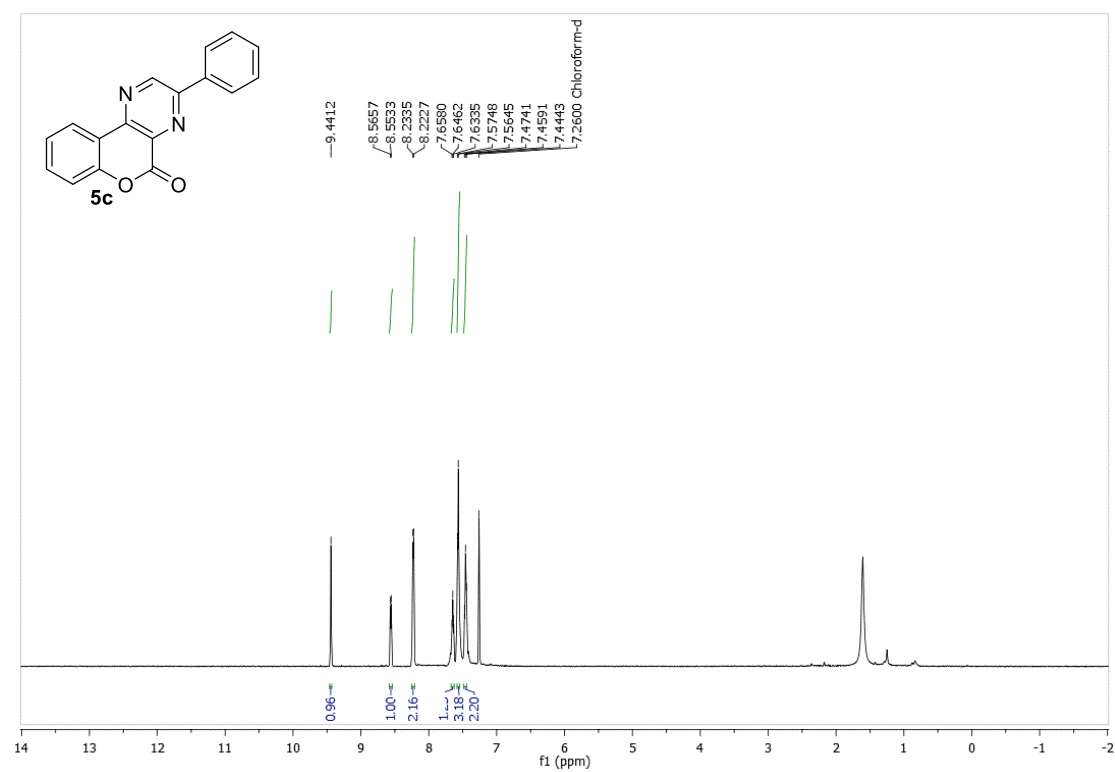
2-Phenyl-5*H*-chromeno[3,4-*b*]-pyrazin-5-one (**4c**)¹H-NMR Spectrum of compound **4c**.Zoom of ¹H-NMR Spectrum compound **4c**.

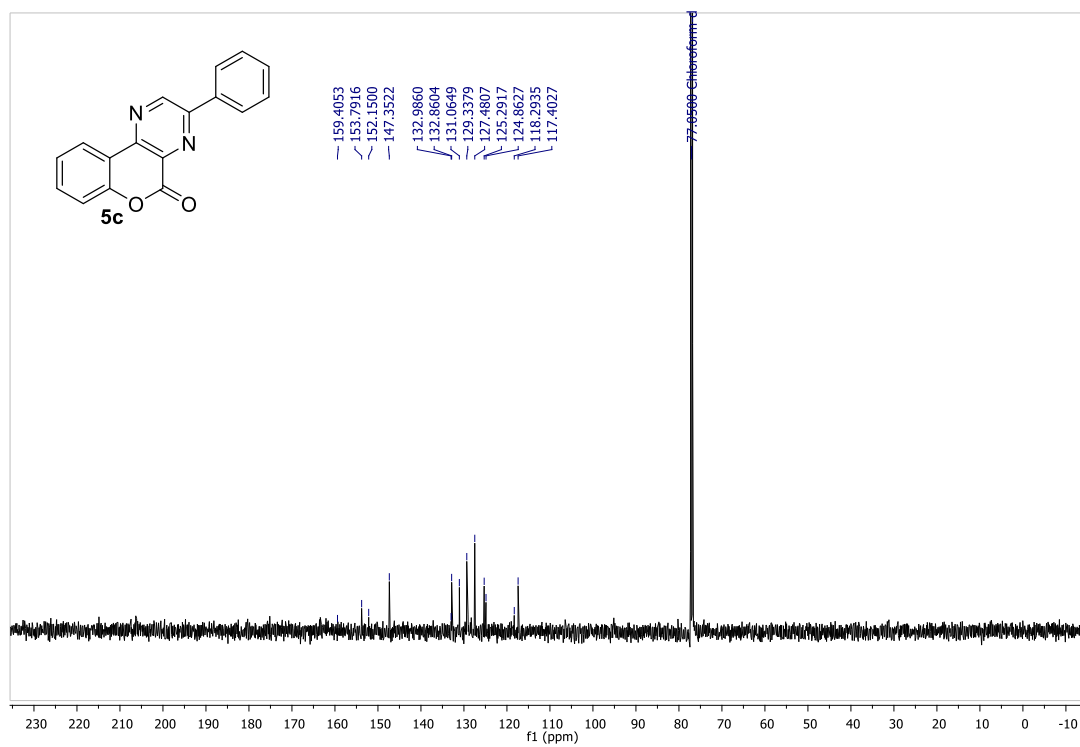


¹³C-NMR Spectrum of compound **4c**.

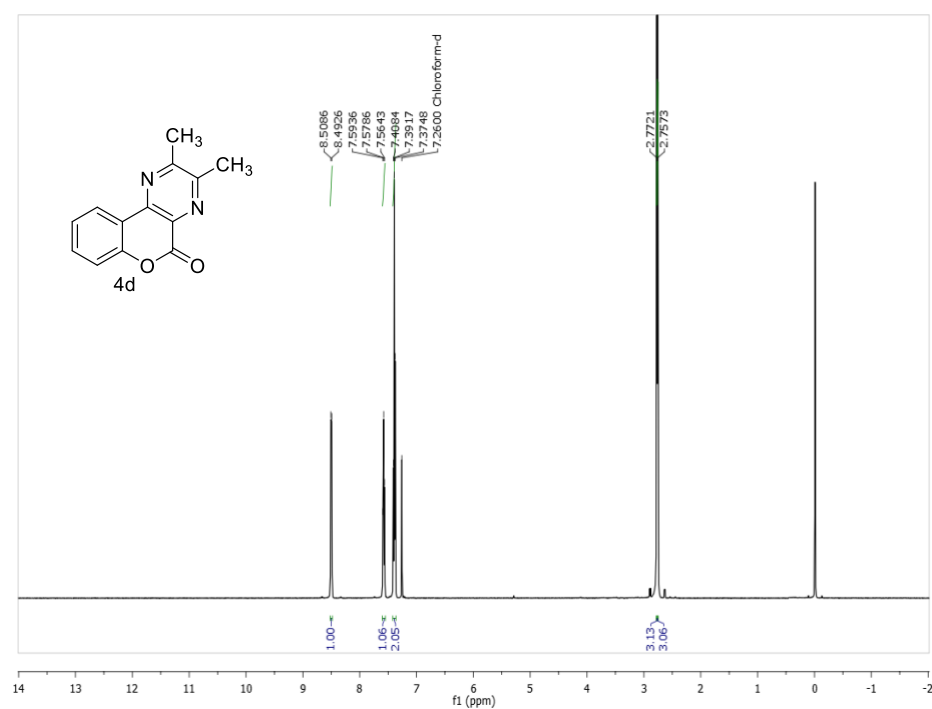


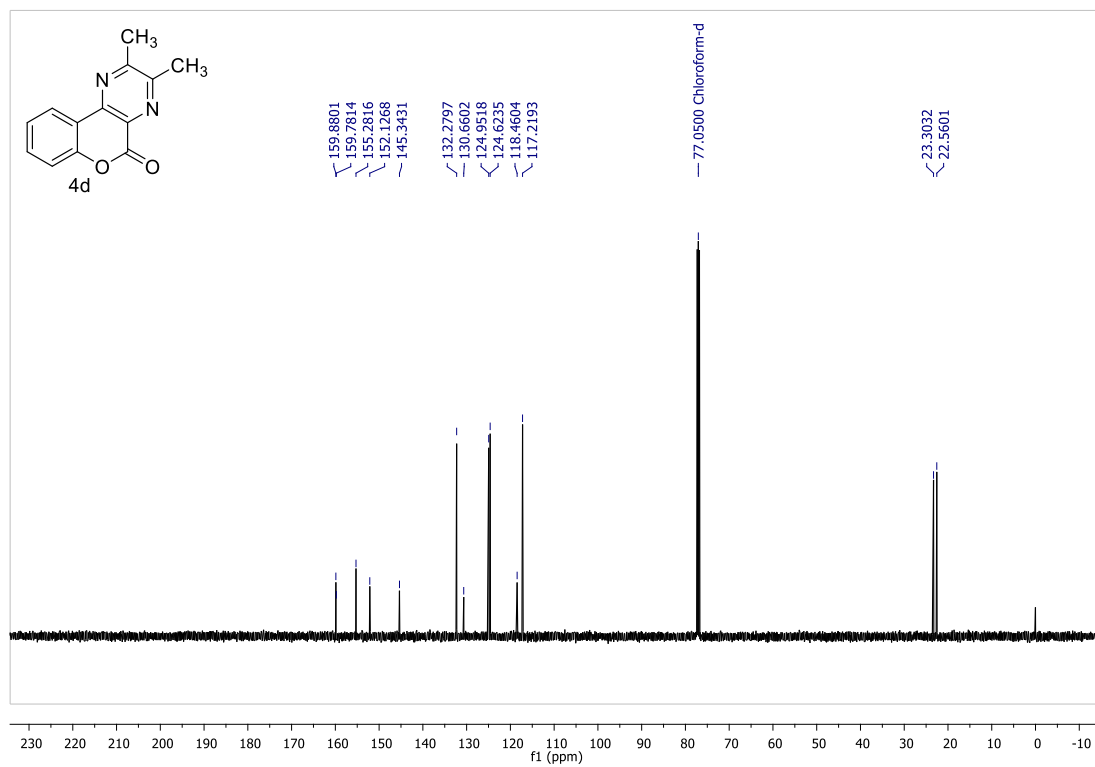
HMBC Spectrum of compound **4c**.

2-Phenyl-5*H*-chromeno[3,4-*b*]-pyrazin-5-one (**5c**)¹H-NMR Spectrum of compound **5c**.

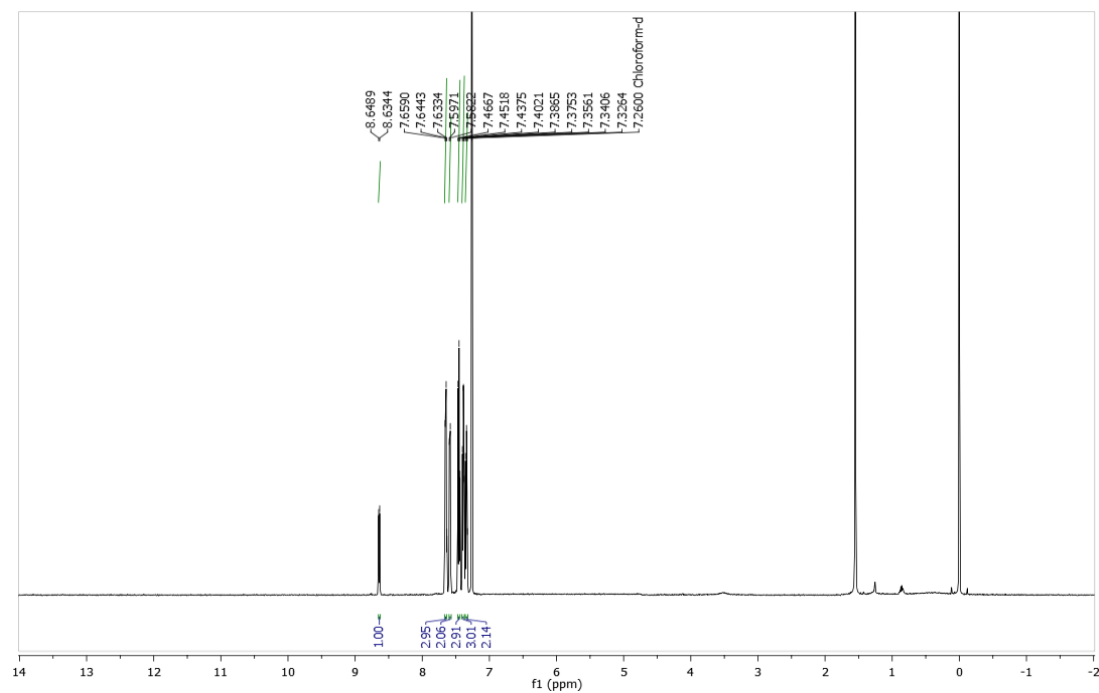
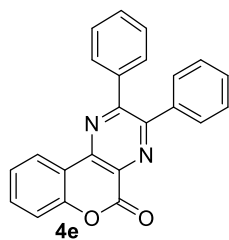


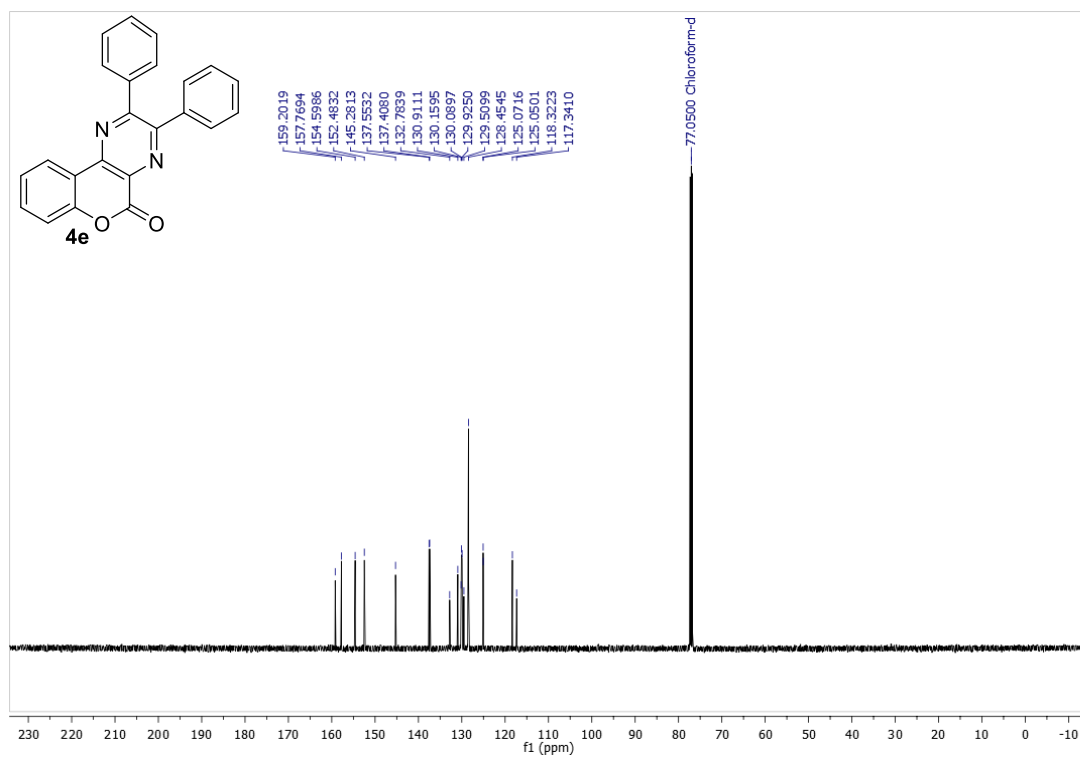
^{13}C -NMR Spectrum of compound **5c**.

2,3-Dimethyl-5*H*-chromeno[3,4-*b*]-pyrazin-5-one (**4d**)¹H-NMR Spectrum of compound **4d**.

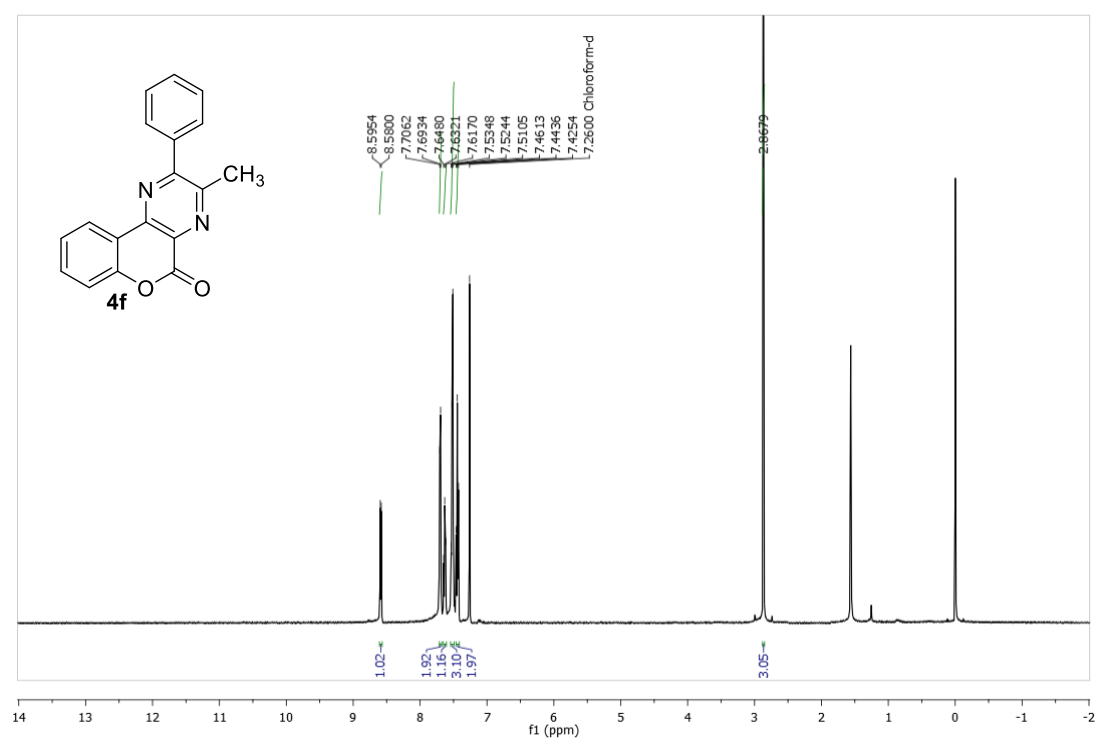


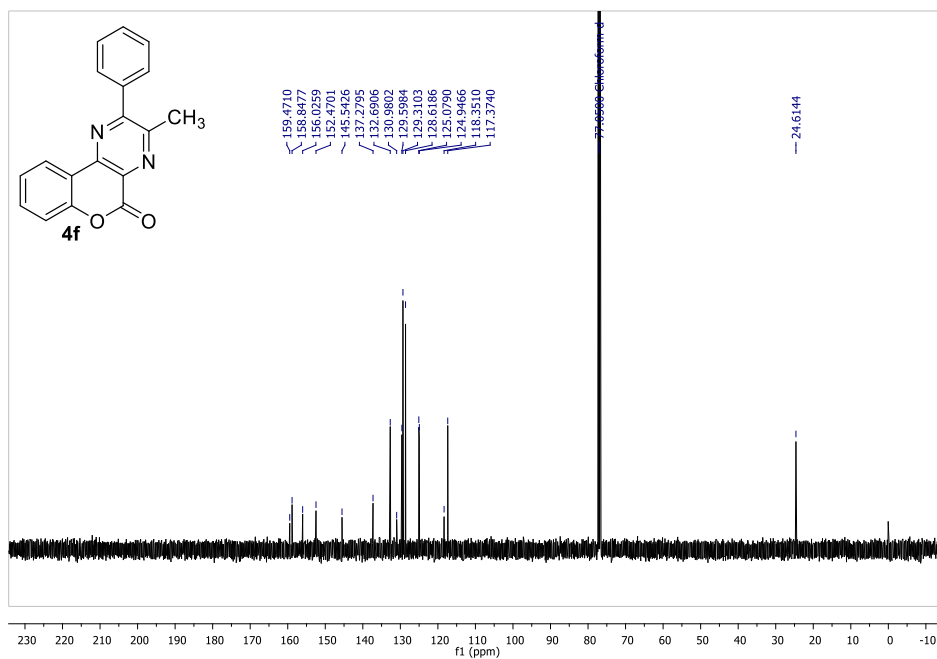
¹³C-NMR Spectrum of compound **4d**.

2,3-Diphenyl-5*H*-chromeno[3,4-*b*]pyrazin-5-one (**4e**)¹H-NMR Spectrum of compound **4e**.

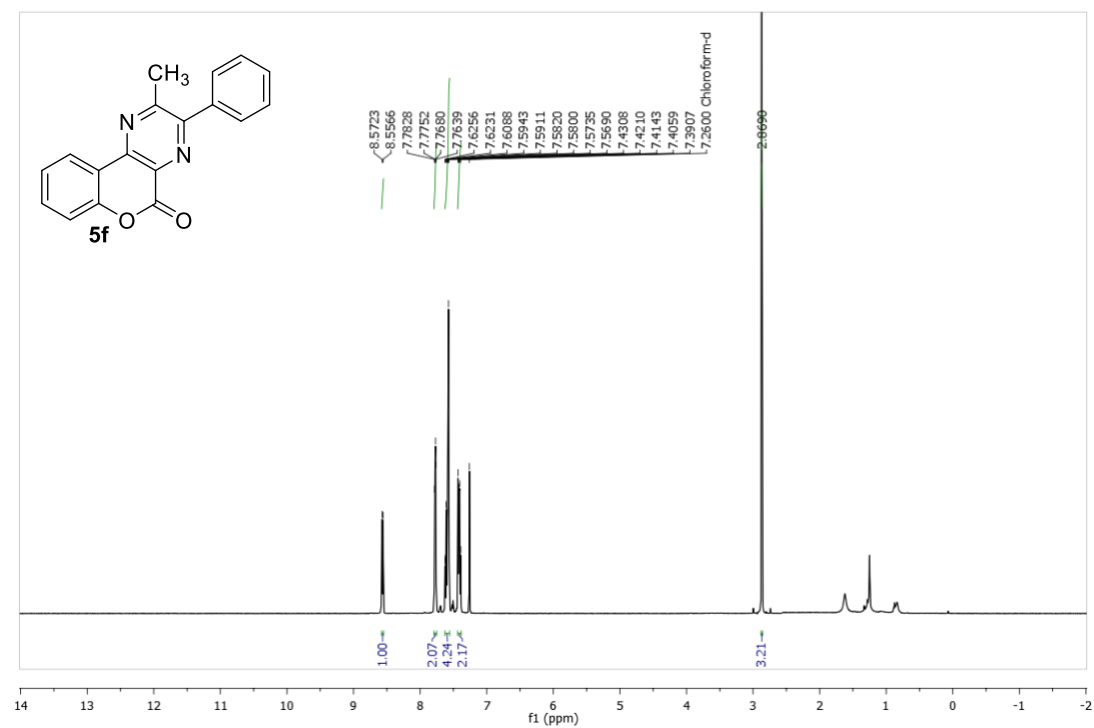
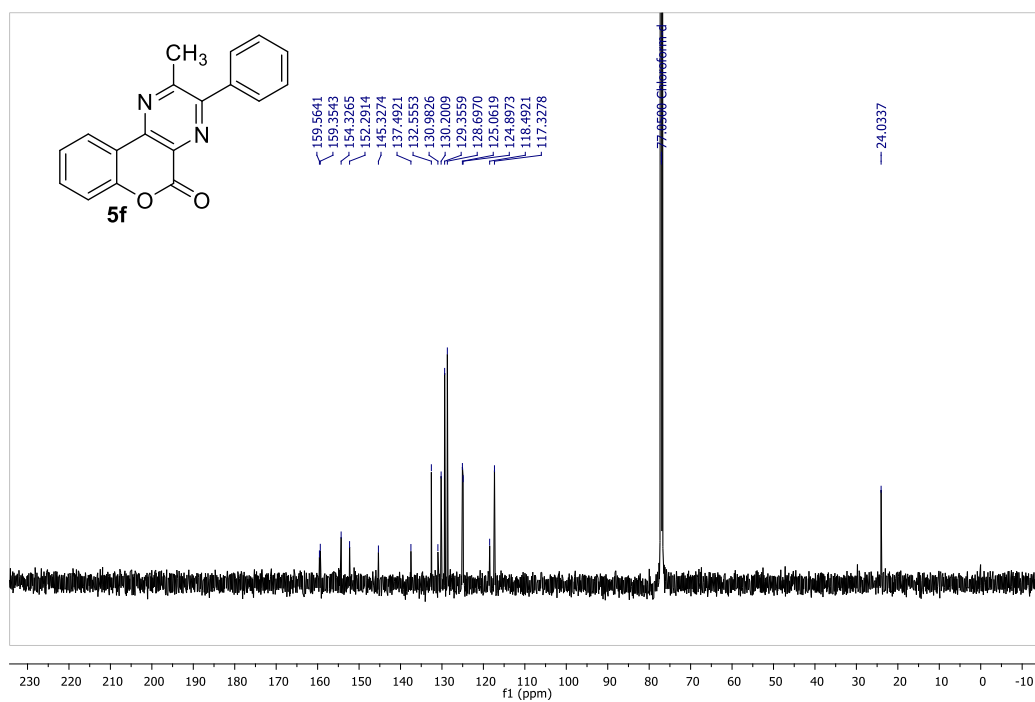


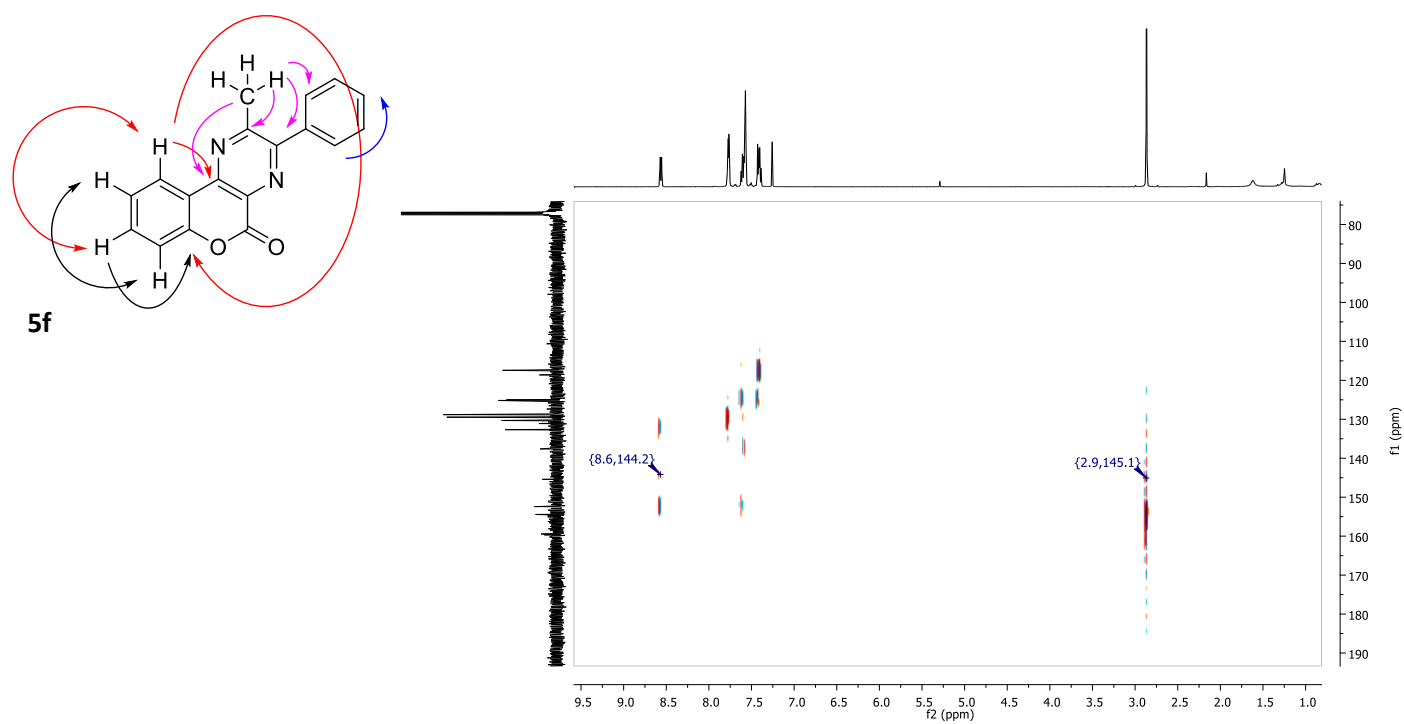
^{13}C -NMR Spectrum of compound **4e**.

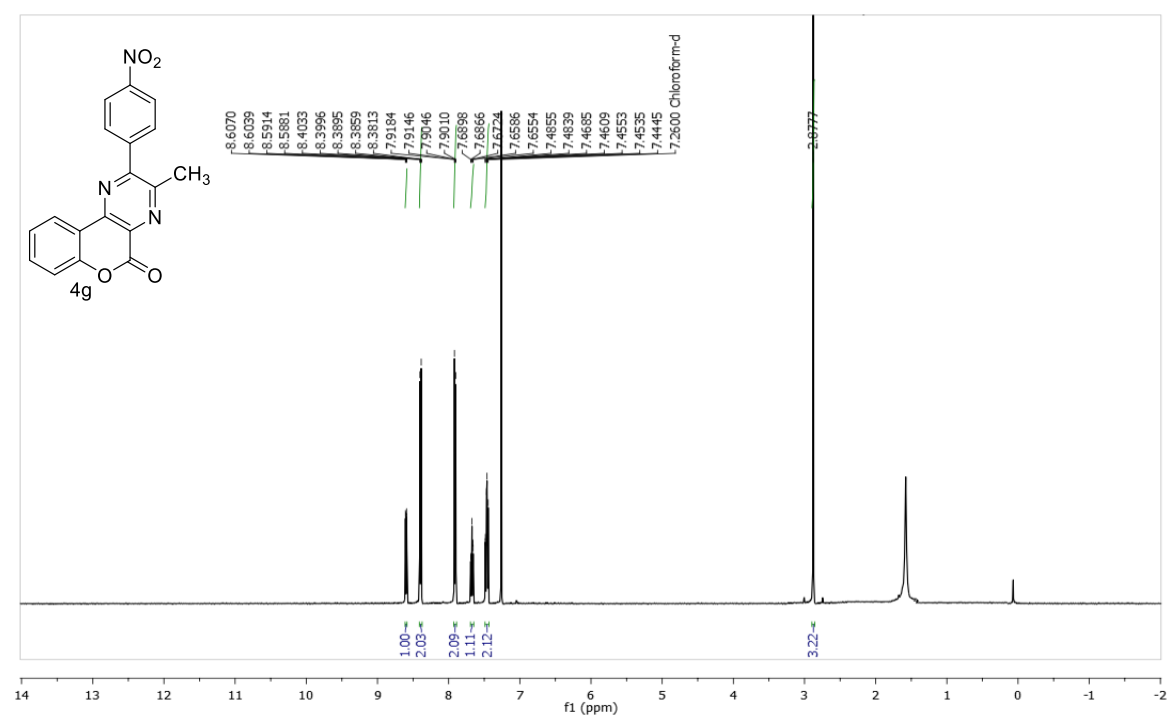
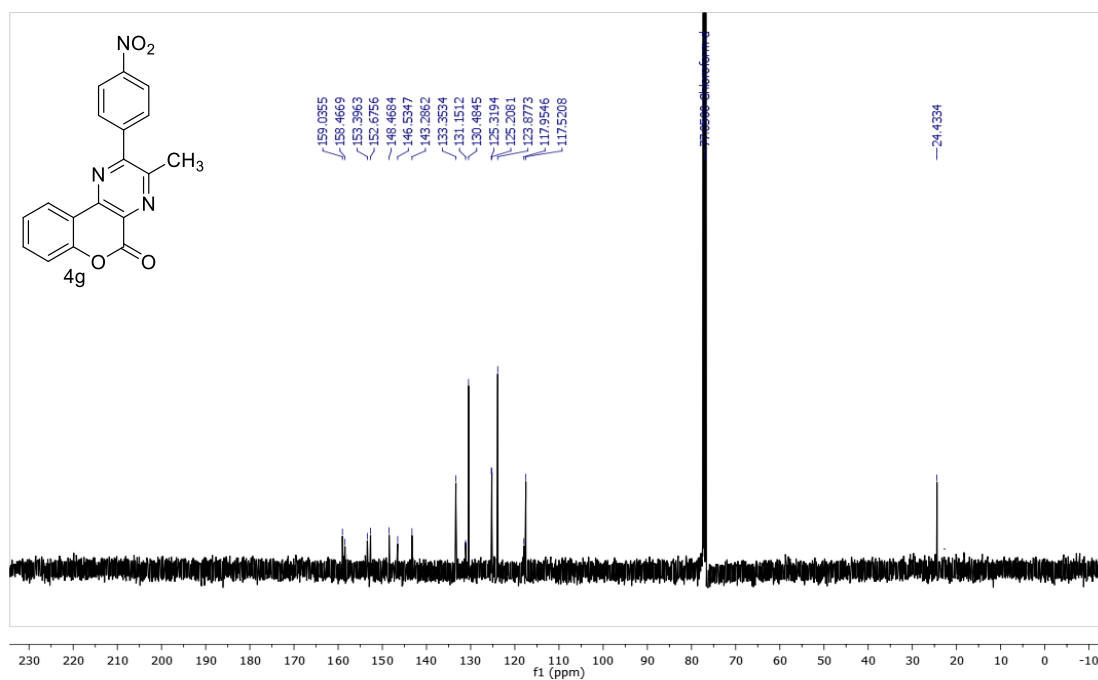
3-Methyl-3-phenyl-5*H*-chromeno[3,4-*b*]pyrazin-5-one (**4f**)¹H-NMR Spectrum of compound **4f**.

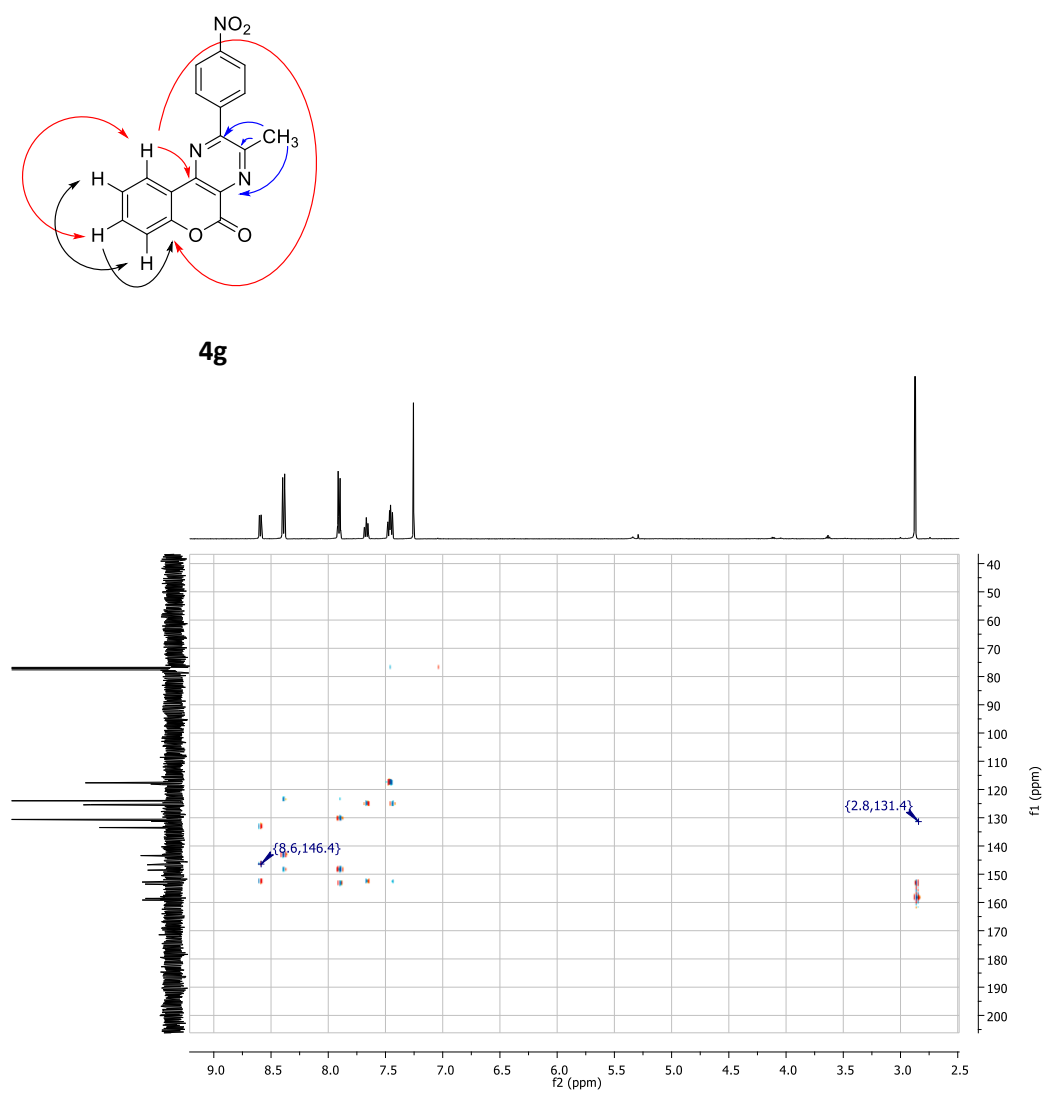


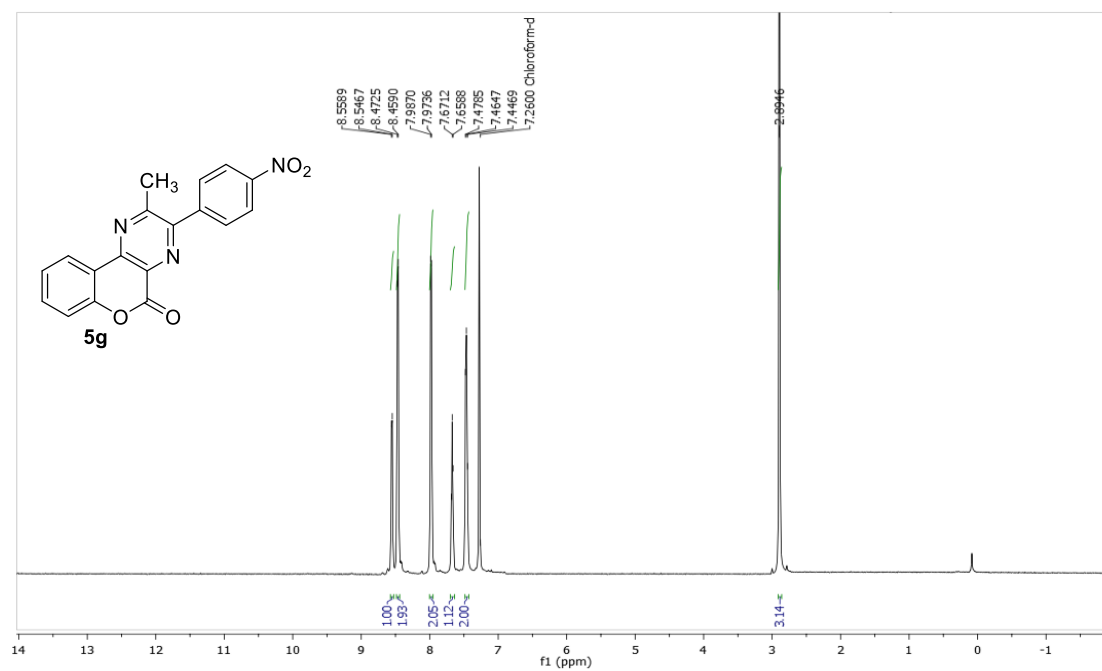
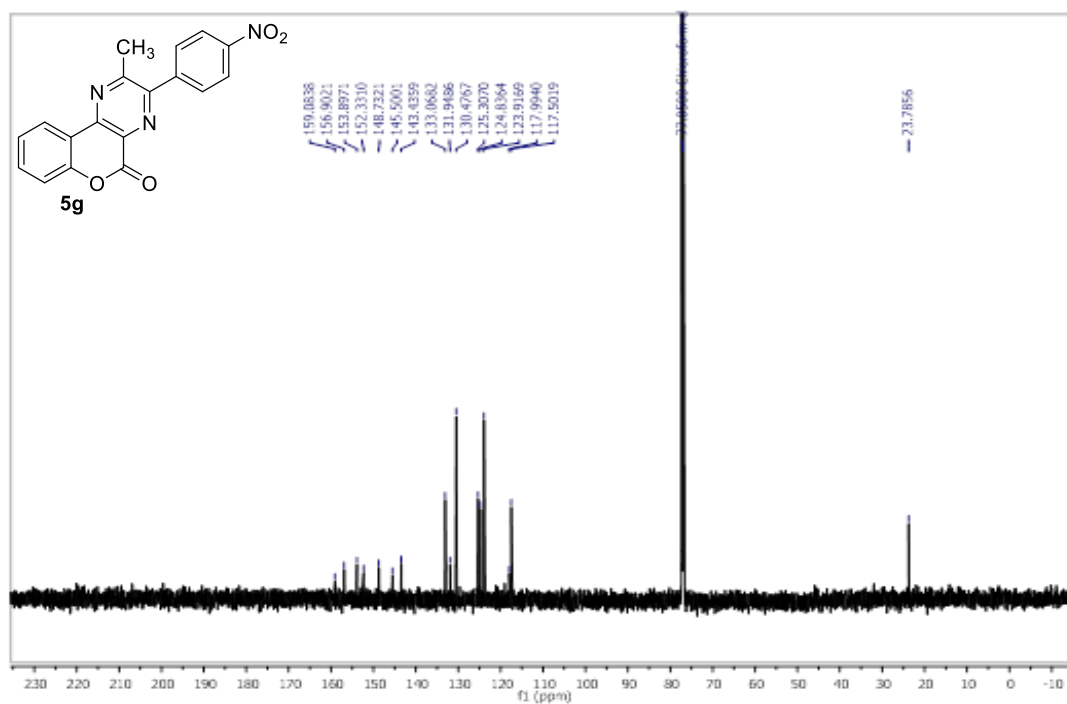
¹³C-NMR Spectrum of compound **4f**.

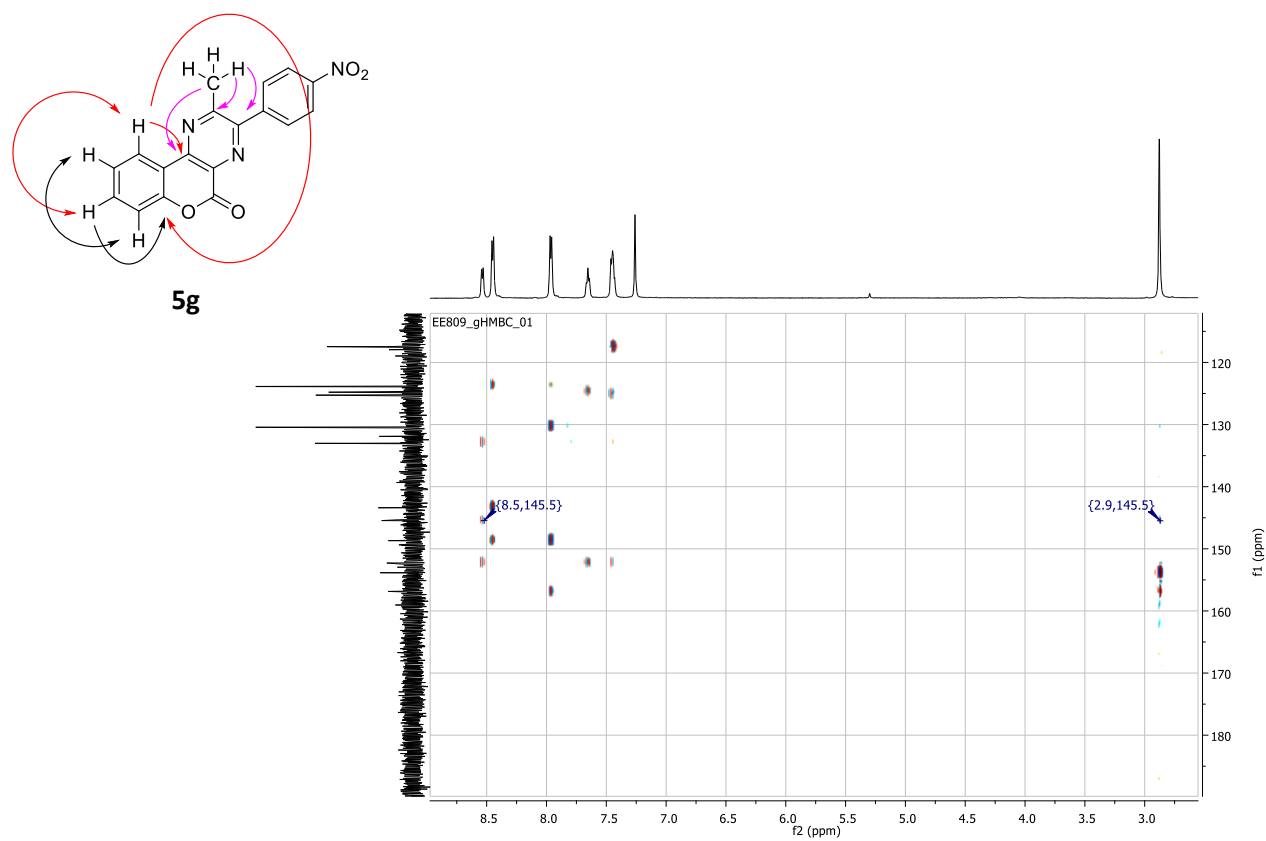
2-Methyl-3-phenyl-5H-chromeno[3,4-*b*]-pyrazin-5-one (**5f**)¹H-NMR Spectrum of compound **5f**.¹³C-NMR Spectrum of compound **5f**.

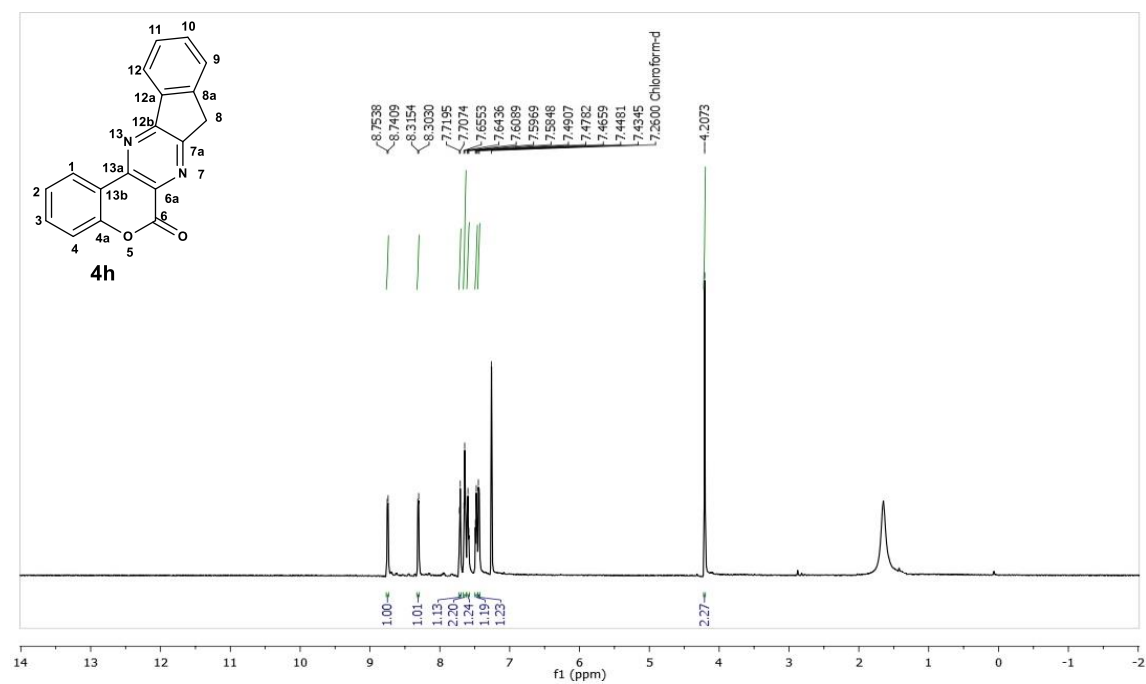
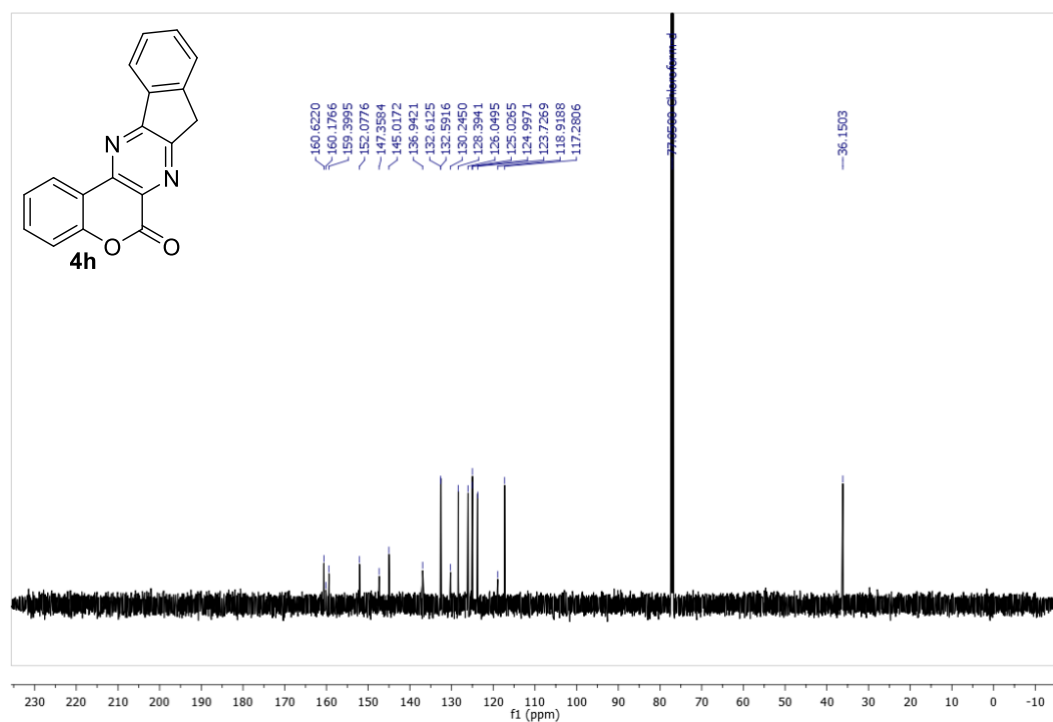
HMBC Spectrum of compound **5f**.

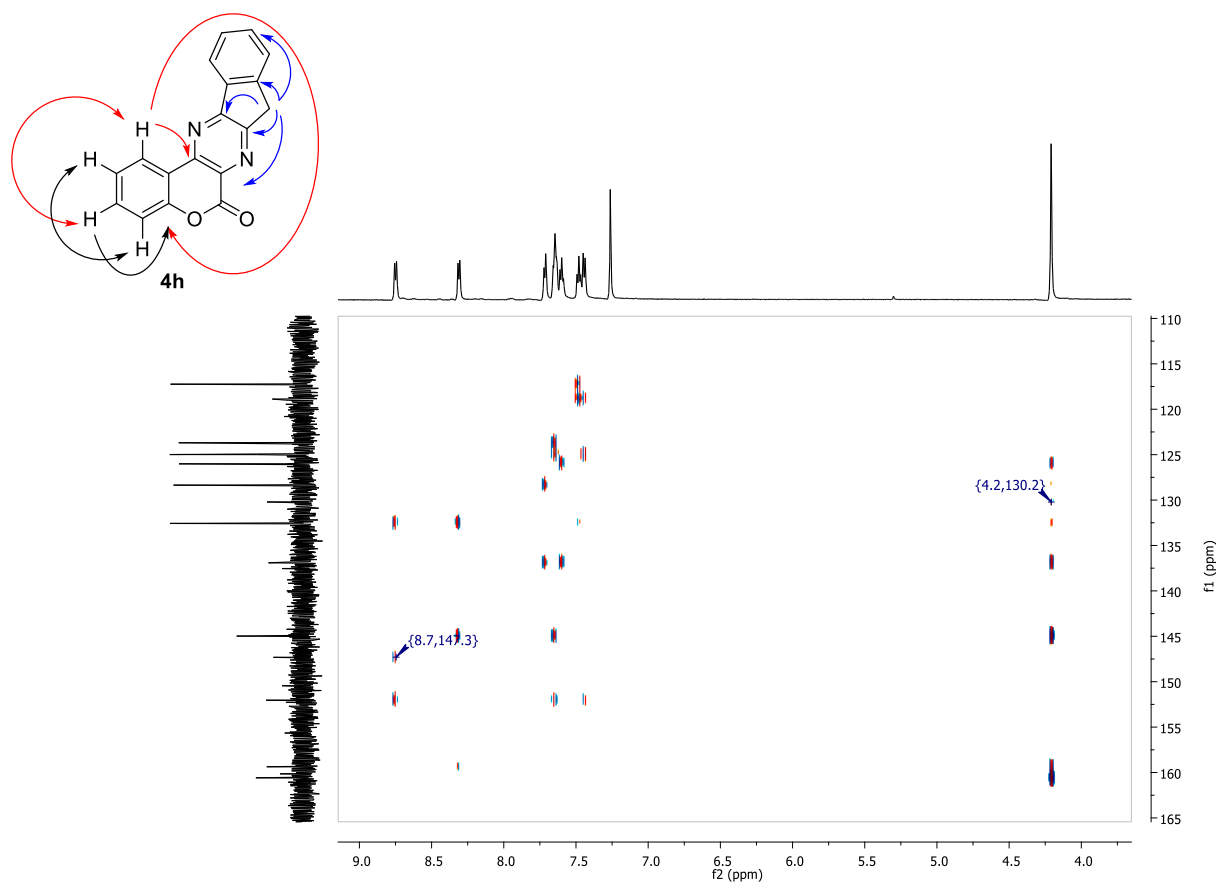
3-Methyl-2-(4-nitrophenyl)-5*H*-chromeno[3,4-*b*]-pyrazin-5-one (**4g**)¹H-NMR Spectrum of compound **4g**.¹³C-NMR Spectrum of compound **4g**.

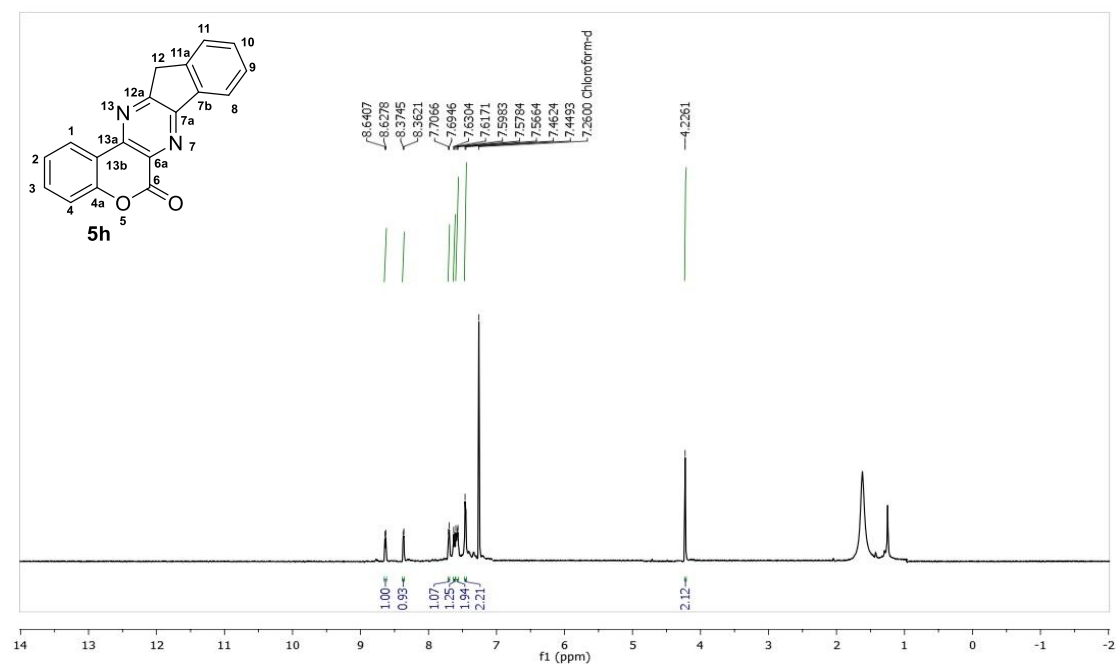
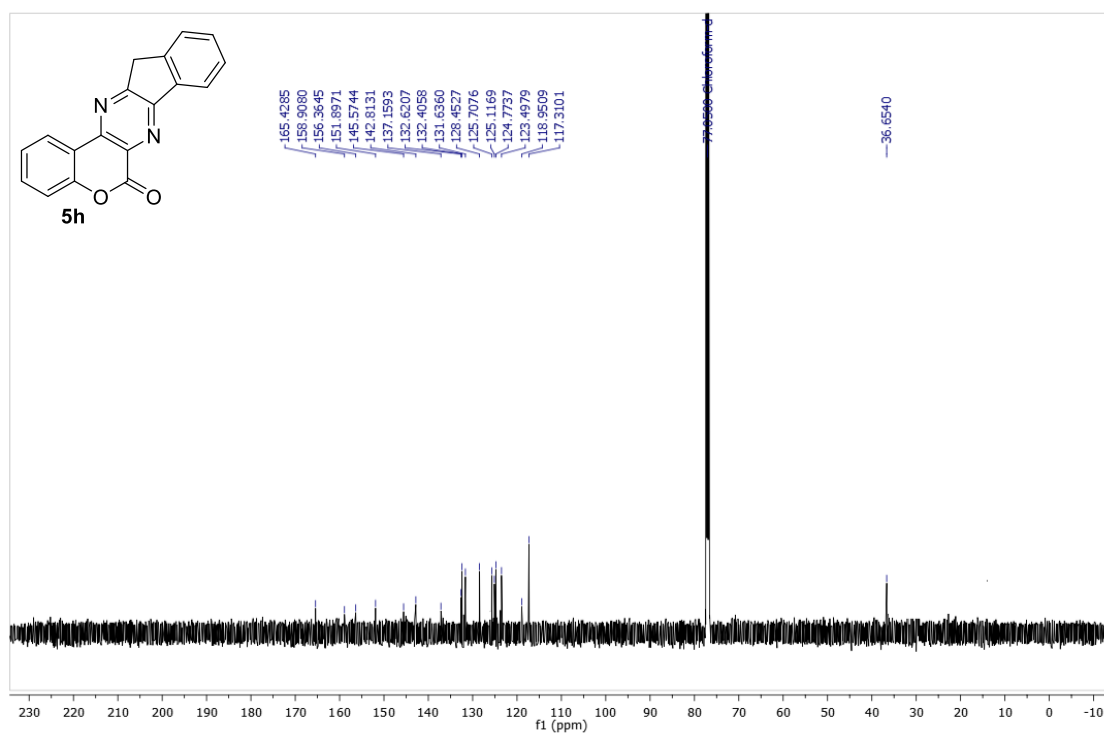
HMBC Spectrum of compound **4g**.

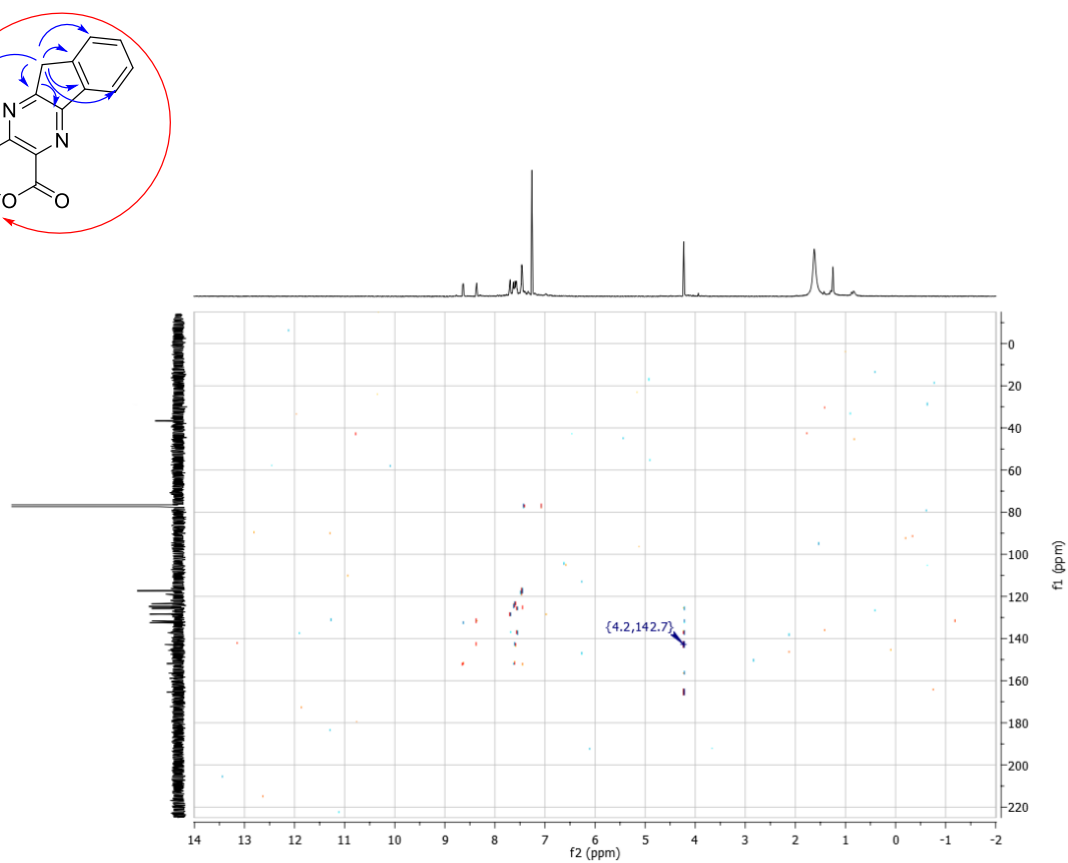
2-Methyl-3-(4-nitrophenyl)-5H-chromeno[3,4-b]-pyrazin-5-one (**5g**)¹H-NMR Spectrum of compound **5g**.¹³C-NMR Spectrum of compound **5g**.

HMBC Spectrum of compound **5g**.

Chromeno[3,4-*b*]indeno[1,2-*e*]-pyrazin-6(8*H*)-one (**4h**)¹H-NMR Spectrum of compound **4h**.¹³C-NMR Spectrum of compound **4h**.

HMBC Spectrum of compound **4h**.

Chromeno[3,4-*b*]-indeno[2,1-*e*]pyrazin-6(12*H*)-one (**5h**)¹H-NMR Spectrum of compound **5h**.¹³C-NMR Spectrum of compound **5h**.



HMBC
Spectrum of
compound

5h.