

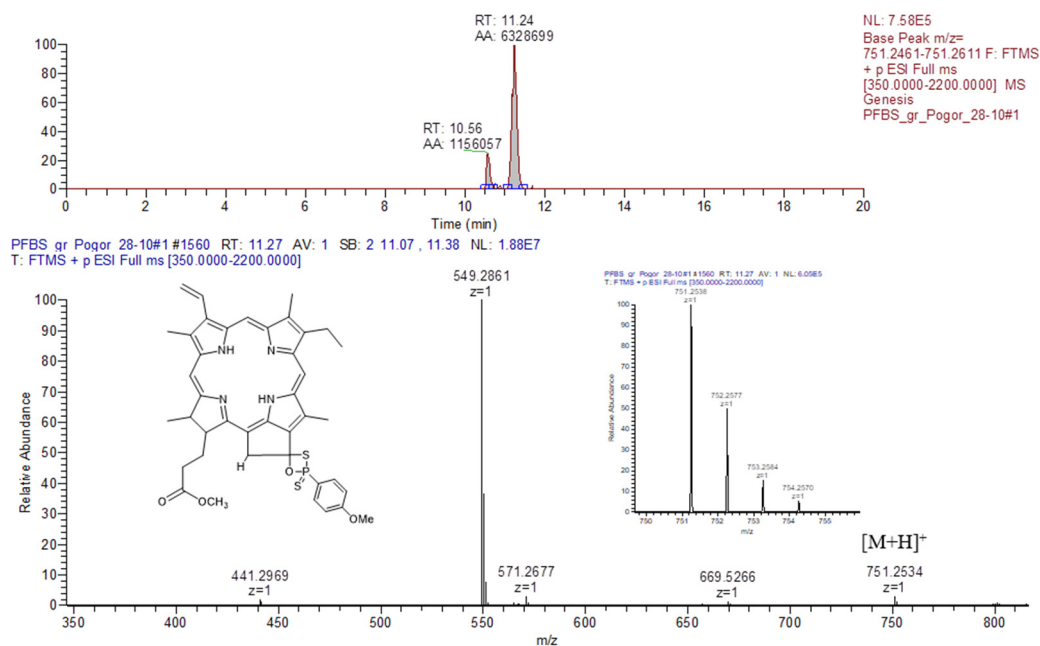
# **Thiocarbonyl derivatives of natural chlorins: synthesis using the Lawesson's reagent and a study of their properties**

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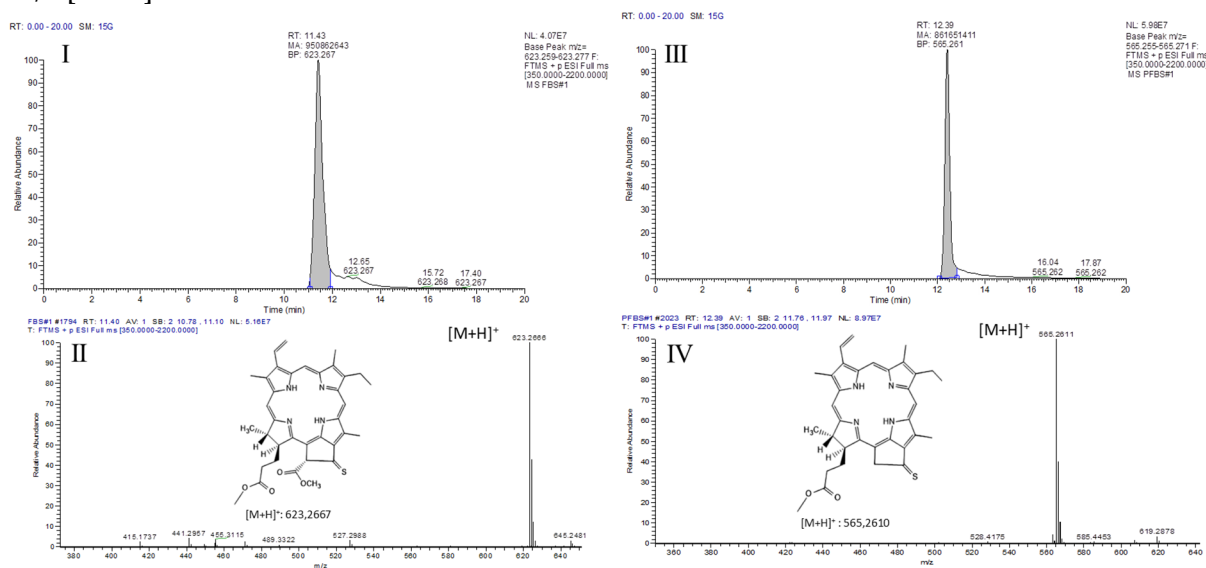
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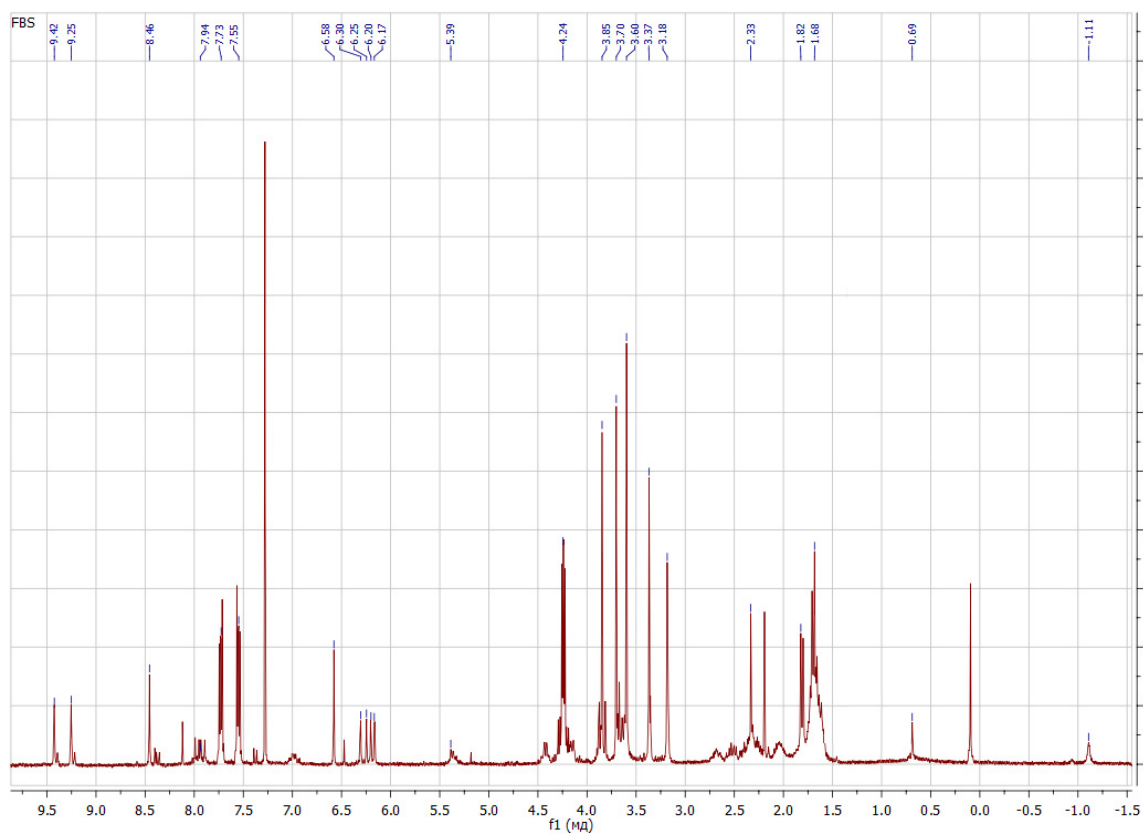
## Instrumental procedures of analysis



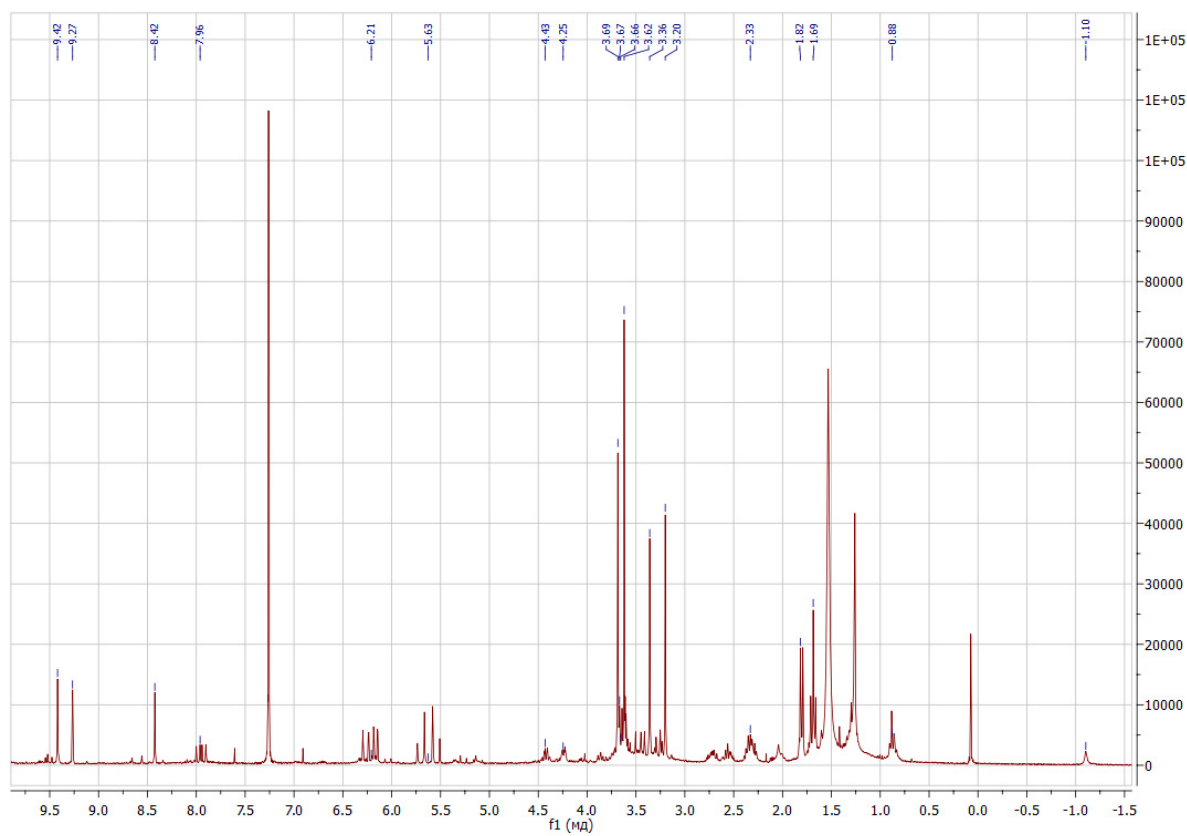
**Figure S1.** Mass chromatogram of the reaction mass, target compound mass time 11.27 min,  $m/z$   $[M+H]^+ = 751.2534$ .



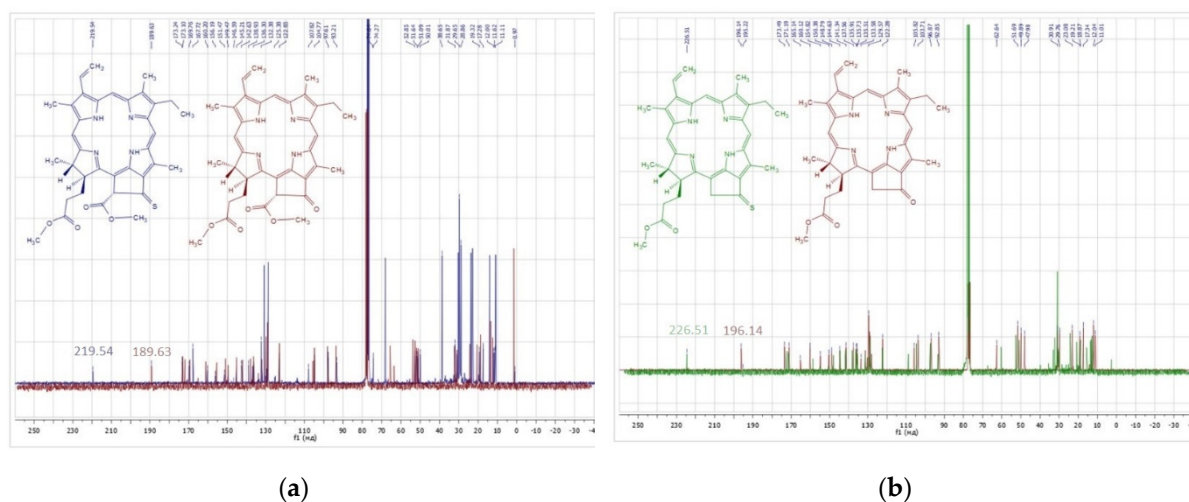
**Figure S2.** Mass chromatogram of compounds (5) and (6): (I) chromatogram of  $^{13}C$ -thioketone pheophorbide *a* (5) retention time 11.43 min; (II) HRMS spectrum of  $^{13}C$ -thioketone pheophorbide *a* (5); (III) chromatogram of  $^{13}C$ -thioketone pyropheophorbide *a* (6) retention time 12.39 min; (IV) HRMS spectrum of  $^{13}C$ -thioketone pyropheophorbide *a* (6).



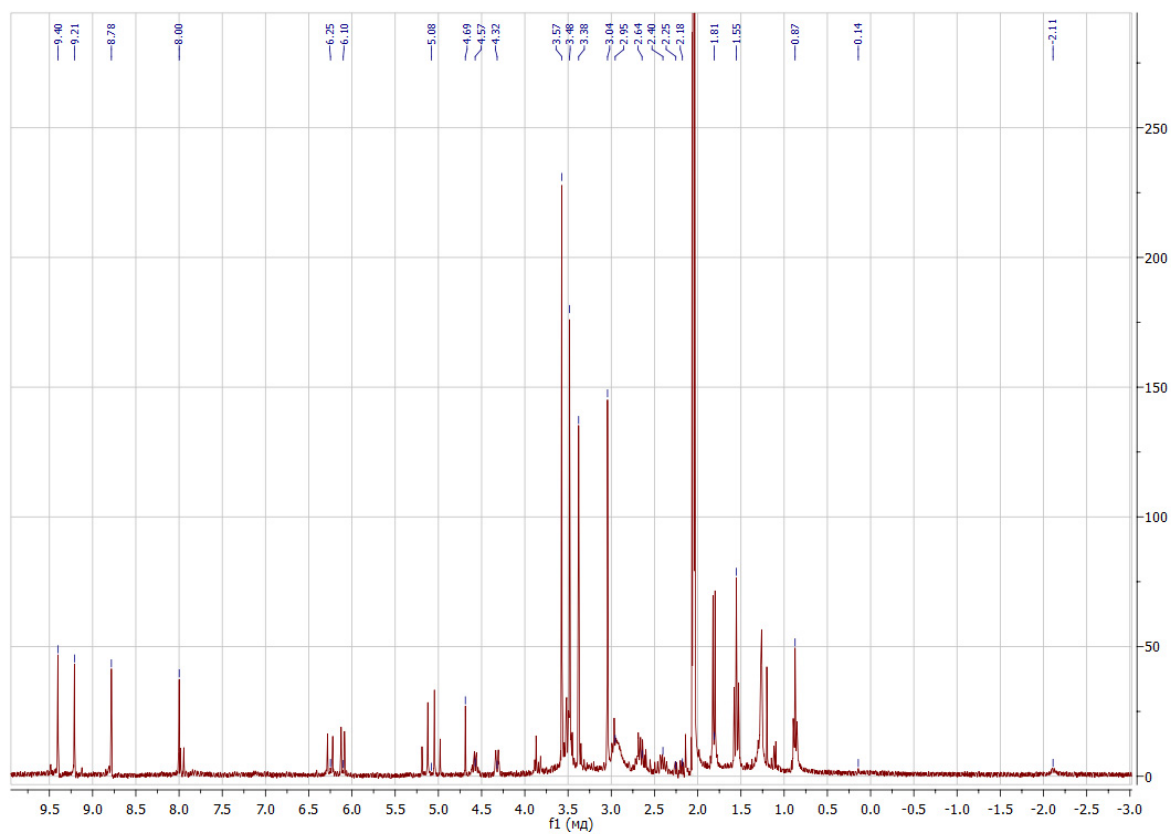
**Figure S3.** <sup>1</sup>H NMR spectrum of compound 5.



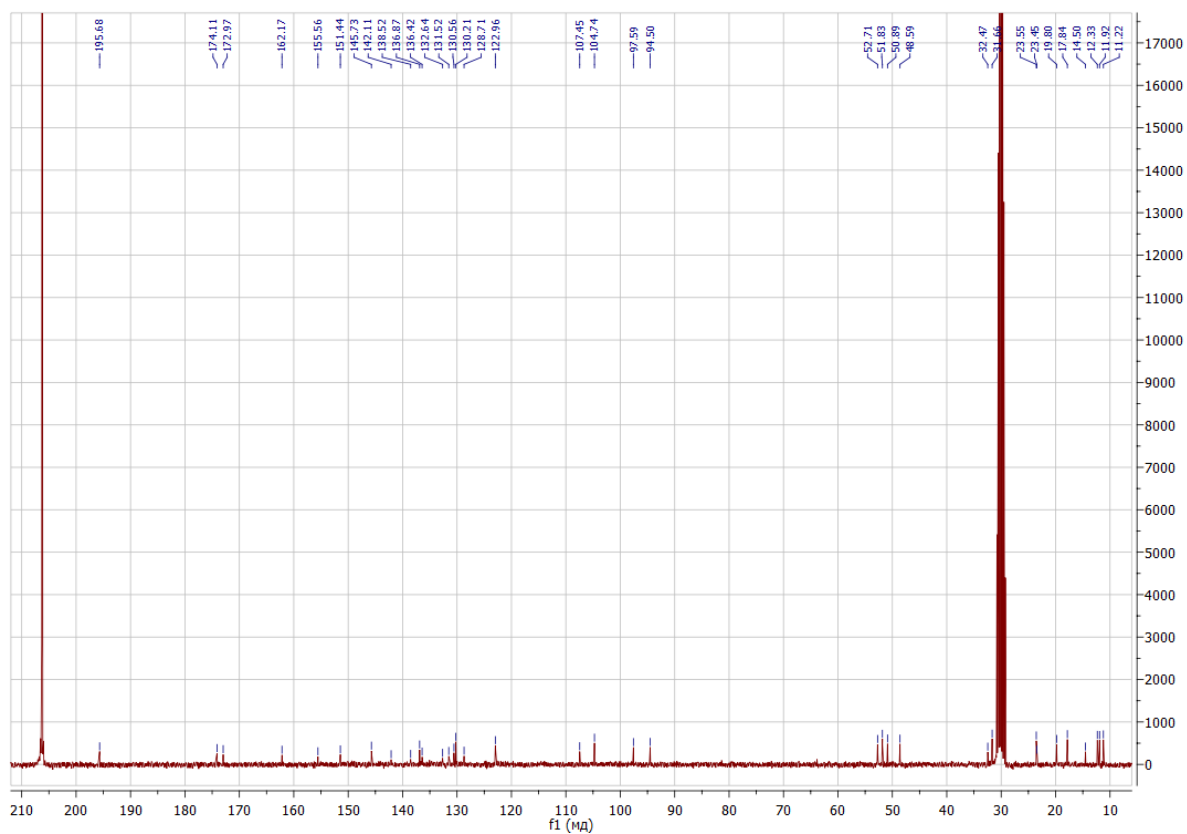
**Figure S4.** <sup>1</sup>H NMR spectrum of compound 6.



**Figure S5.**  $^{13}\text{C}$  NMR spectra. (a): pheophorbide *a* (3) – red, pheophorbide *a* thioketone (5) – blue; (b): pyropheophorbide *a* (4) – red, pyropheophorbide *a* thioketone (6) – green (created with MestRenova)

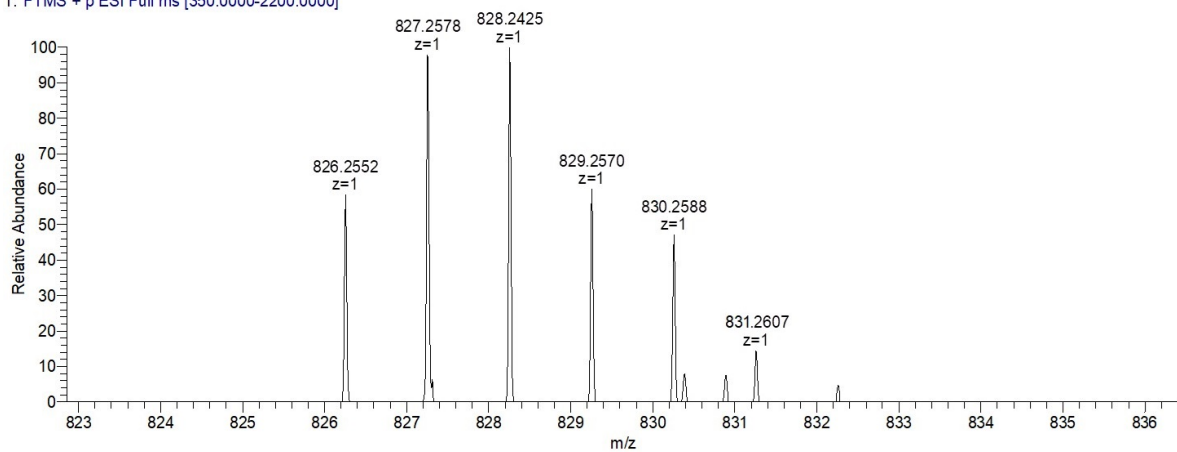


**Figure S6.**  $^1\text{H}$  NMR spectrum of compound 7.



**Figure S7.**  $^{13}\text{C}$  NMR spectrum of compound 7.

pFBS-Pt1#1 #934 RT: 6.16 AV: 1 NL: 1.95E5  
T: FTMS + p ESI Full ms [350.0000-2200.0000]



**Figure S8.** HRMS spectrum of compound 7.