



Supplementary Information

(copies of spectra)

Nucleophilic substitution of hydrogen and synthesis of nickel-, copper-, and cobalt-porphyrinates – double functionalized at the β -positions

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[2-(Cyanomethyl)-3-nitro-5,10,15,20-tetraphenylporphyrinato]nickel(II) (8)

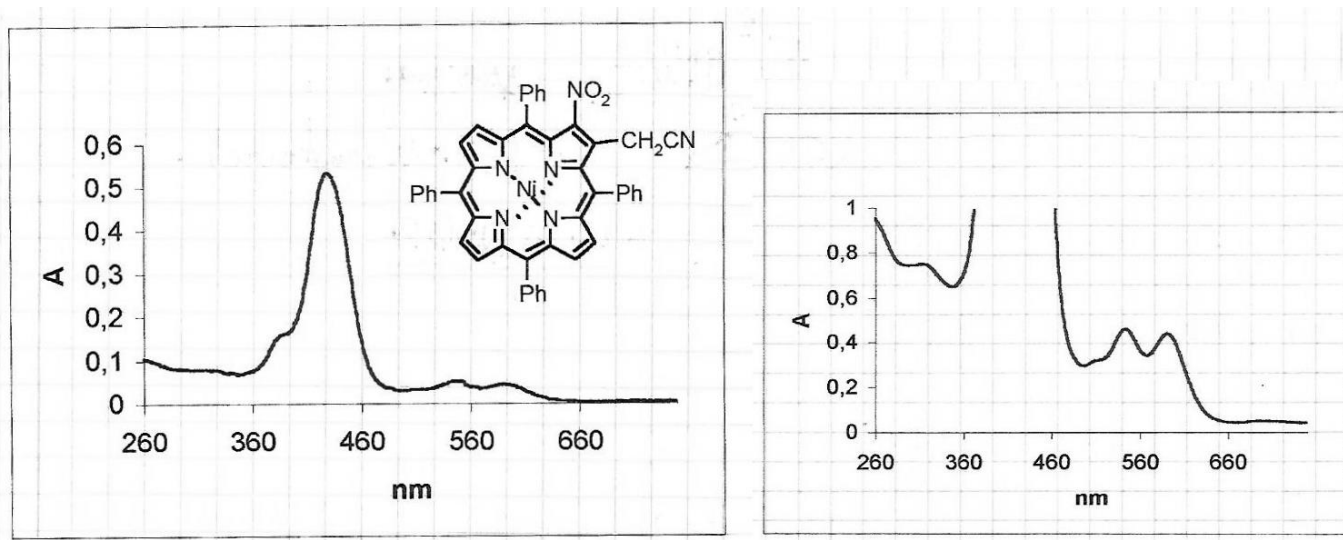


Figure 1. UV-vis spectra of product 8.

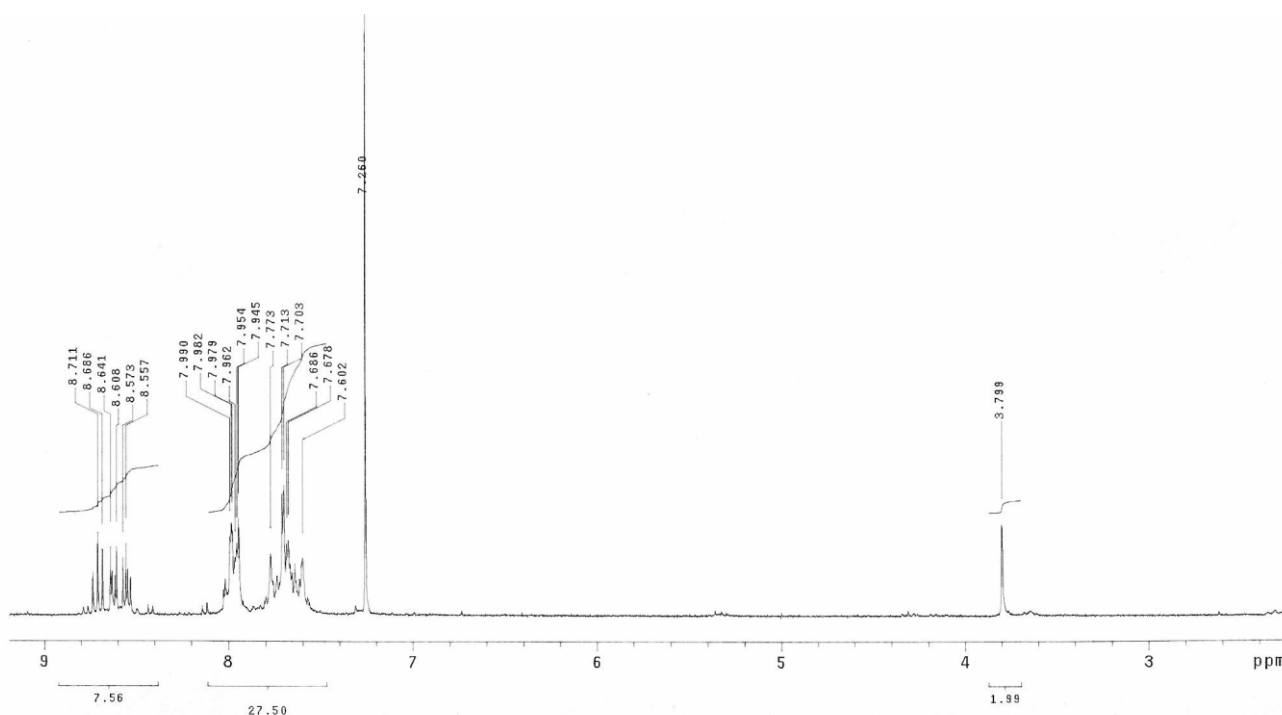


Figure 2. ^1H NMR spectrum of product 8.

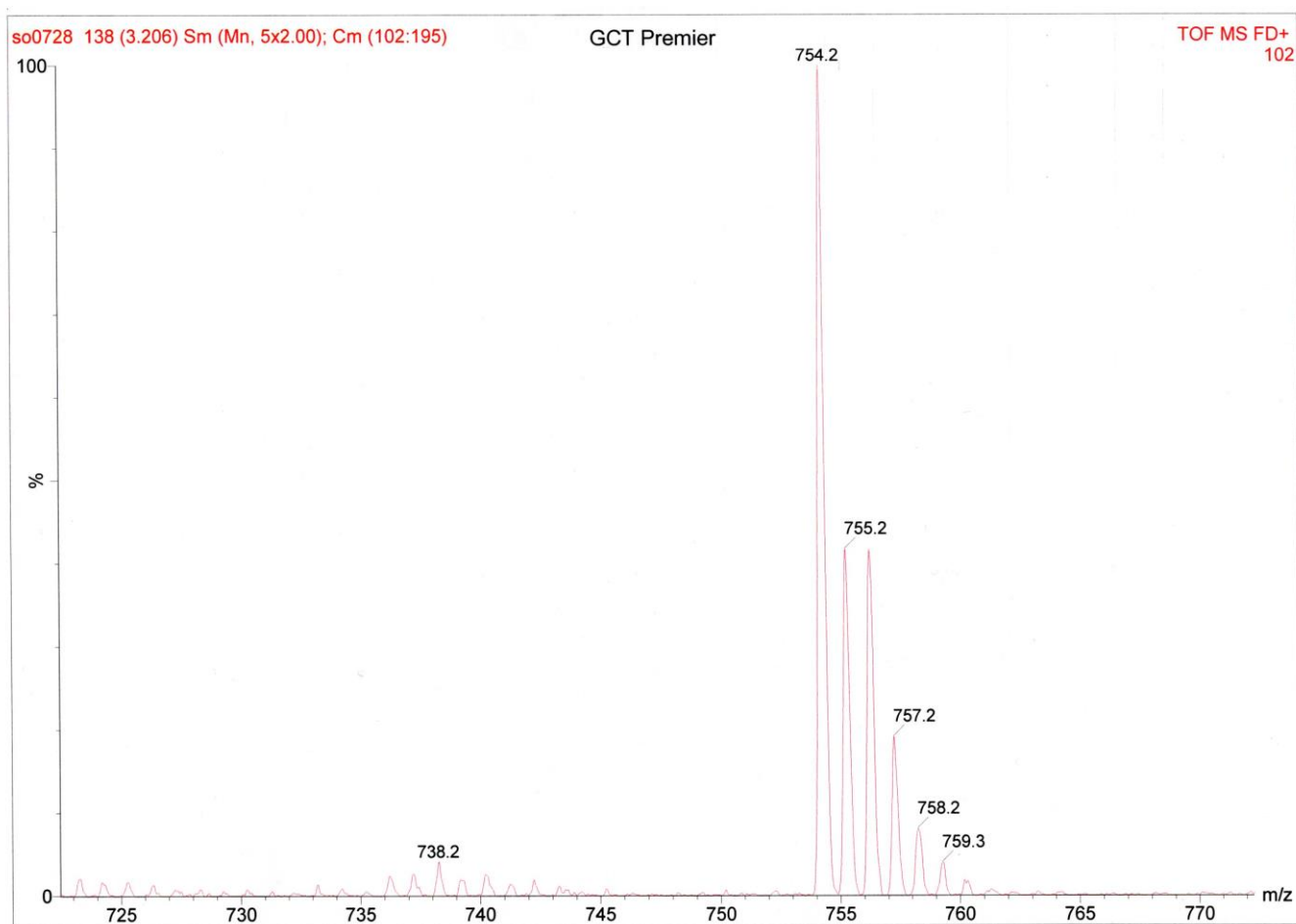


Figure 3. MS spectrum of product **8** (FD technique).

{2-Nitro-3-[(toluene-4-sulphonyl)methyl]-5,10,15,20-tetraphenylporphyrinato}nickel(II) (9)

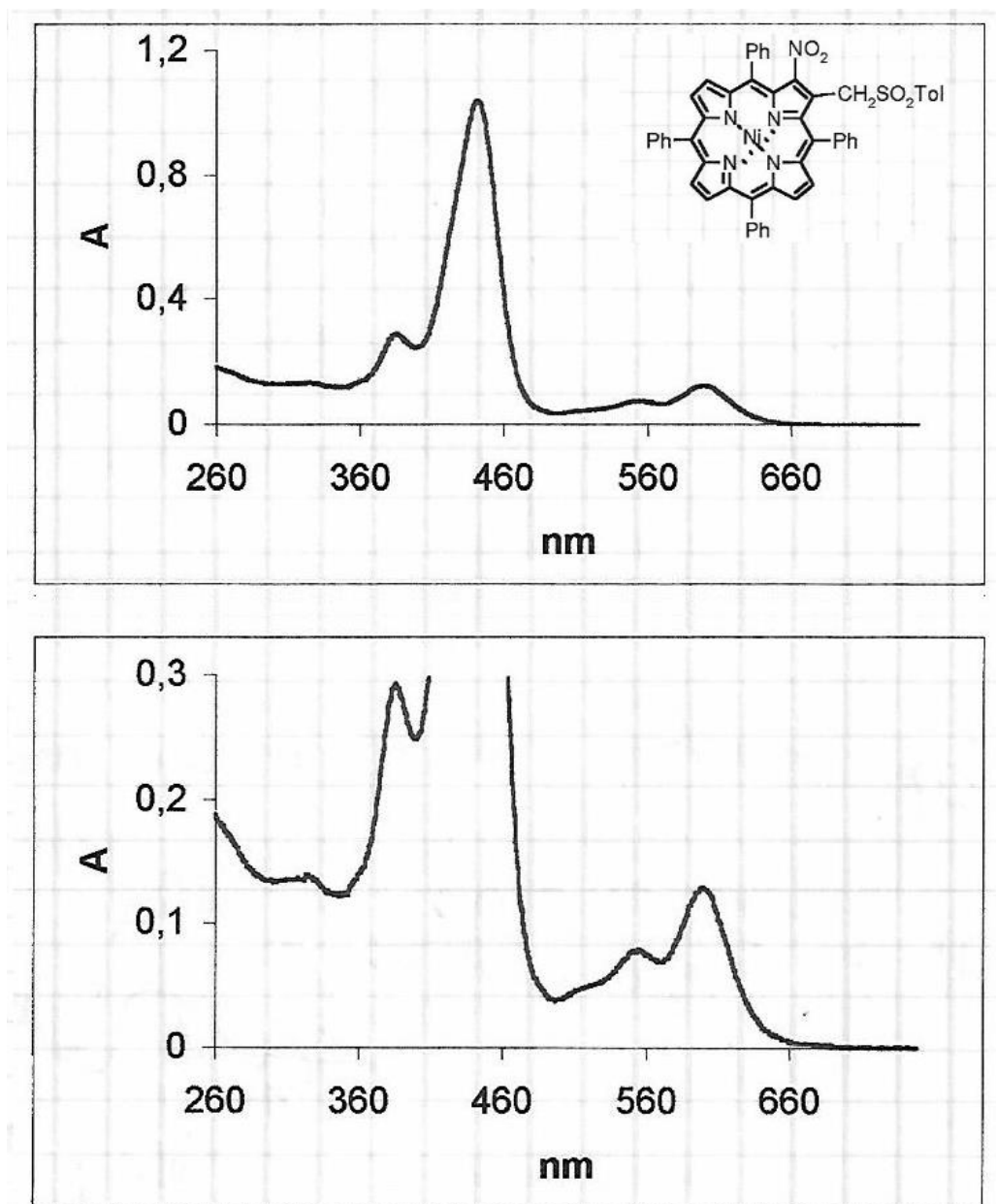


Figure 4. UV-vis spectra of product 9.

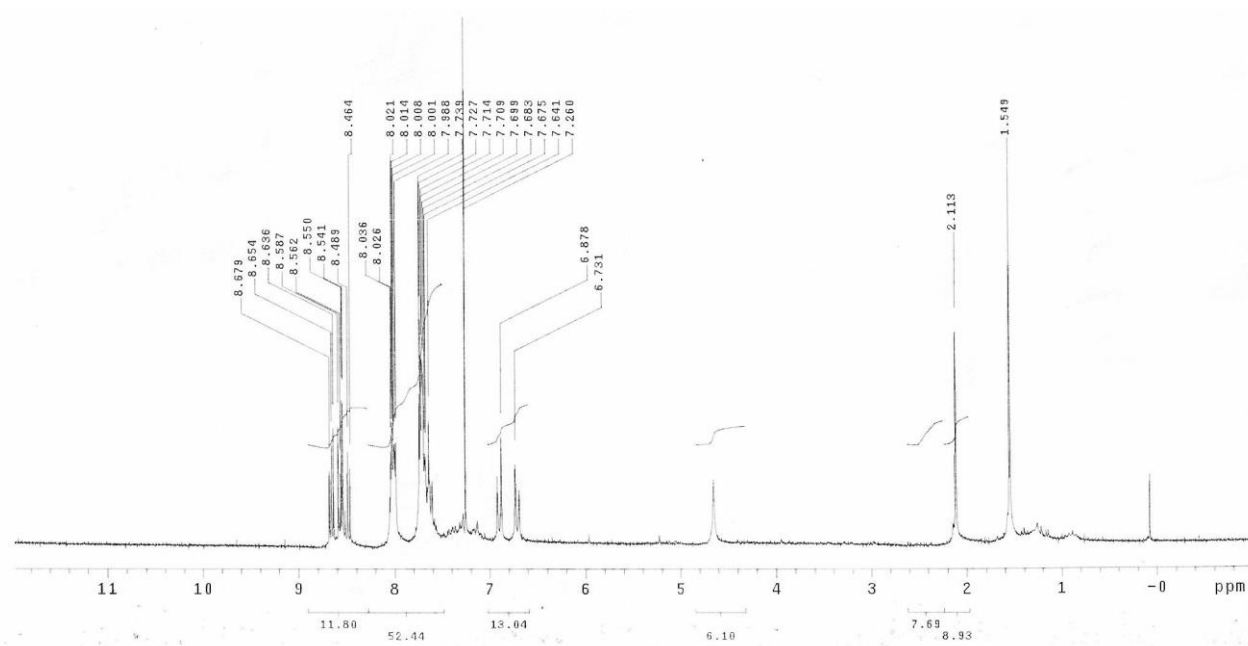


Figure 5. ^1H NMR spectrum of product **9**.

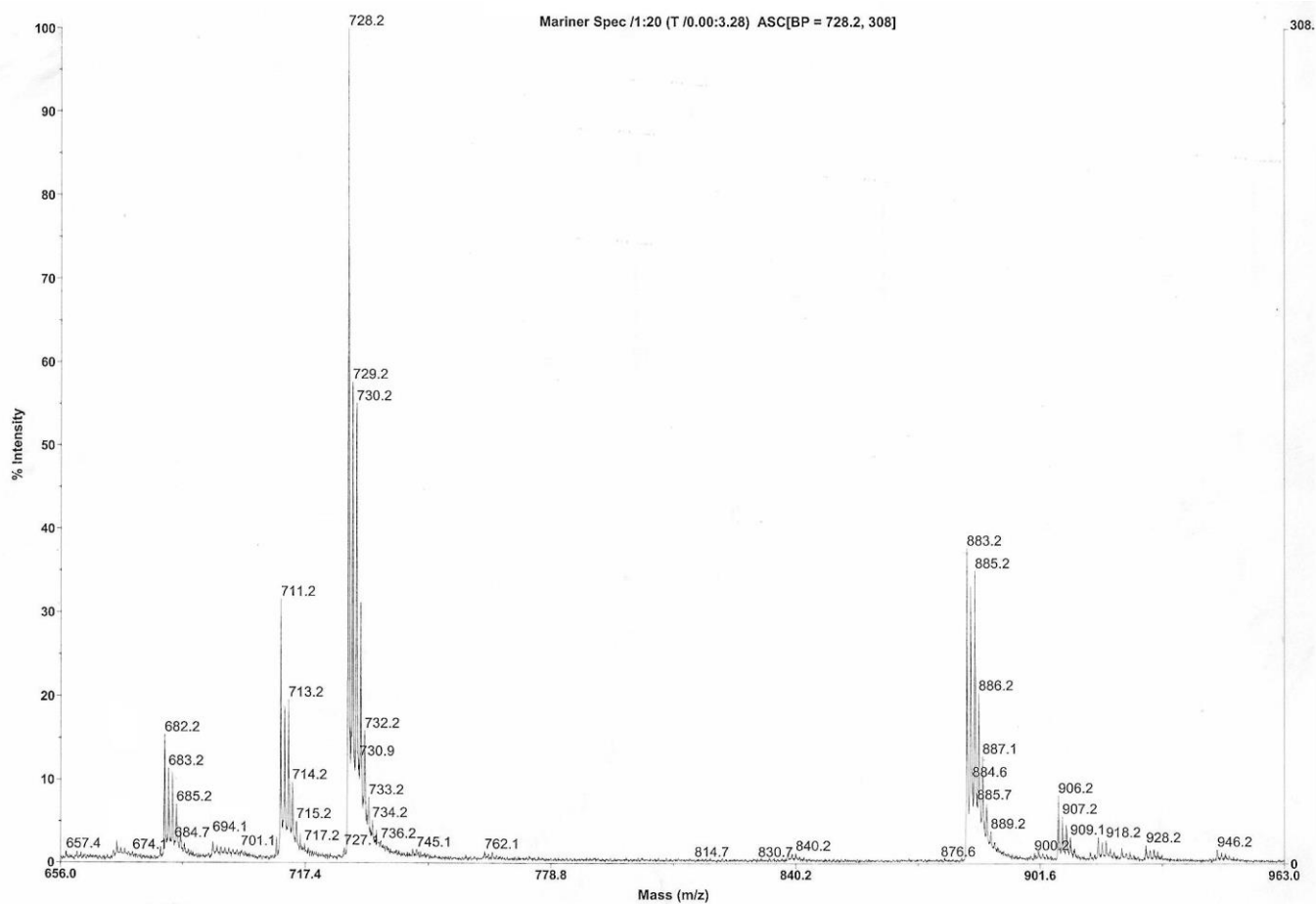


Figure 6. MS spectrum of product **9** (ESI technique; positive ions mode).

{2-Nitro-3-[(phenylsulphonyl)methyl]-5,10,15,20-tetraphenylporphyrinato}nickel(II) (10)

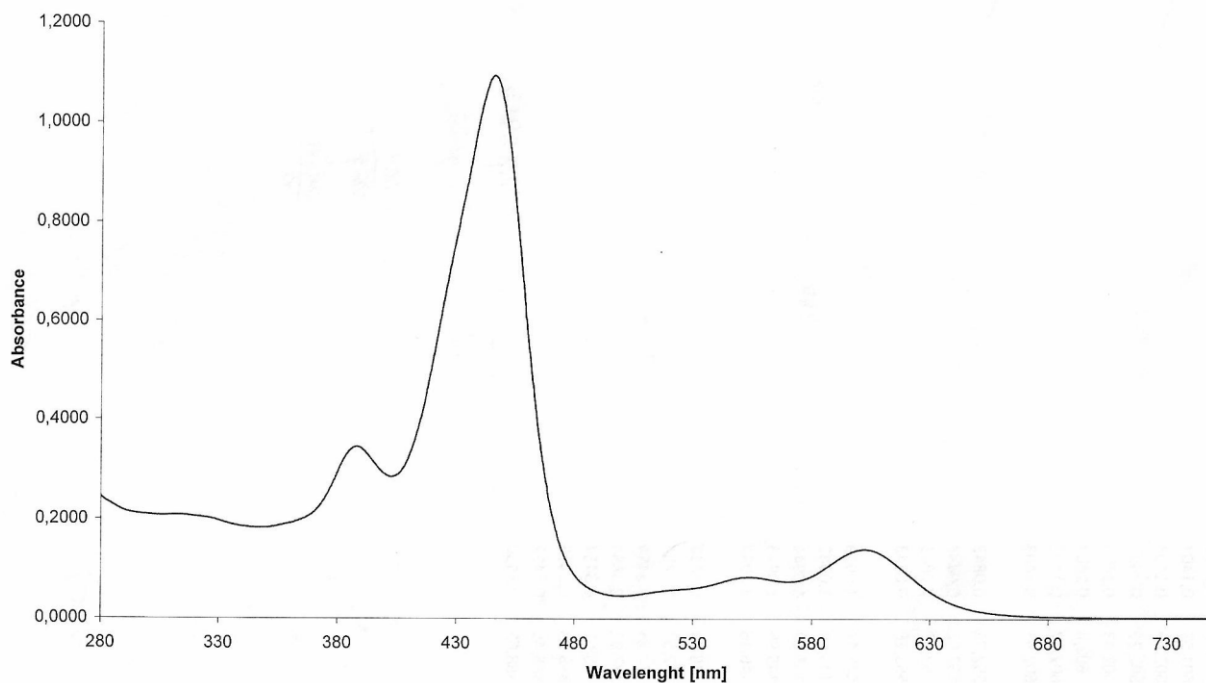


Figure 7. UV-vis spectrum of product **10**.

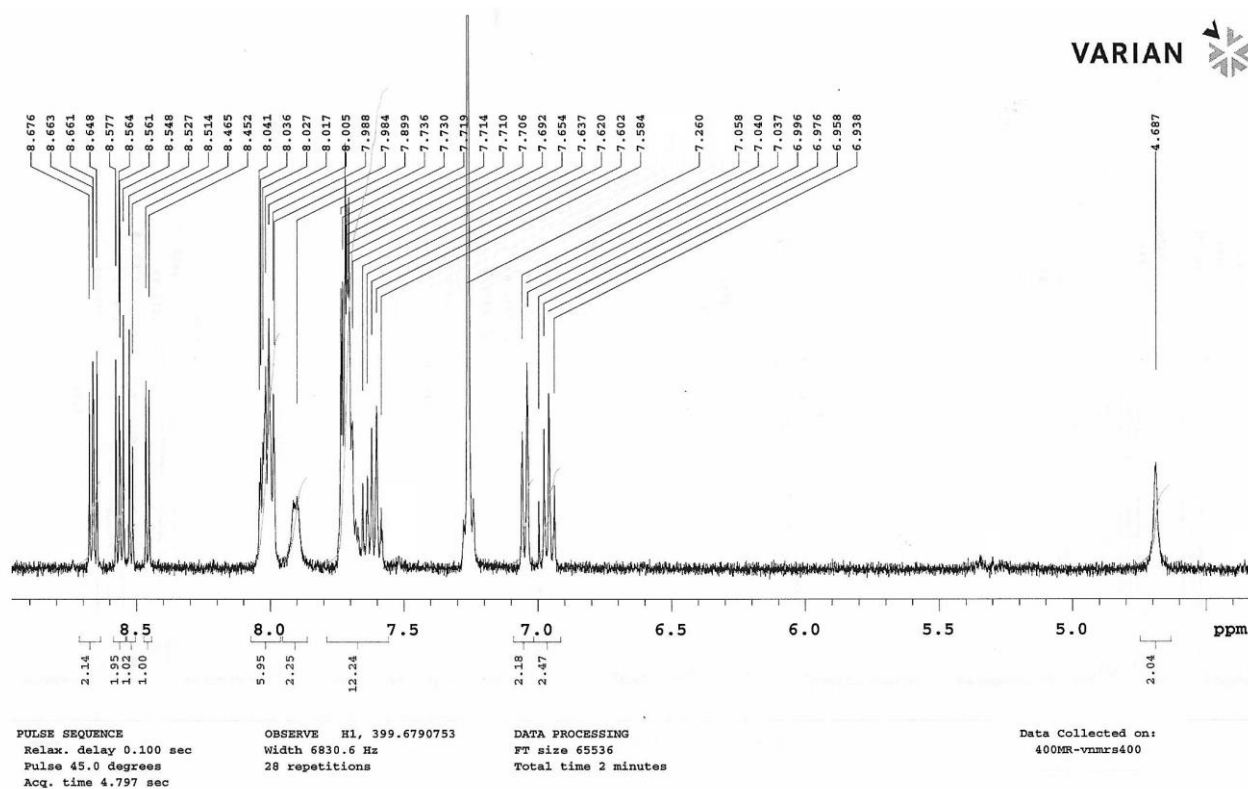


Figure 8. ¹H NMR spectrum of product **10**.

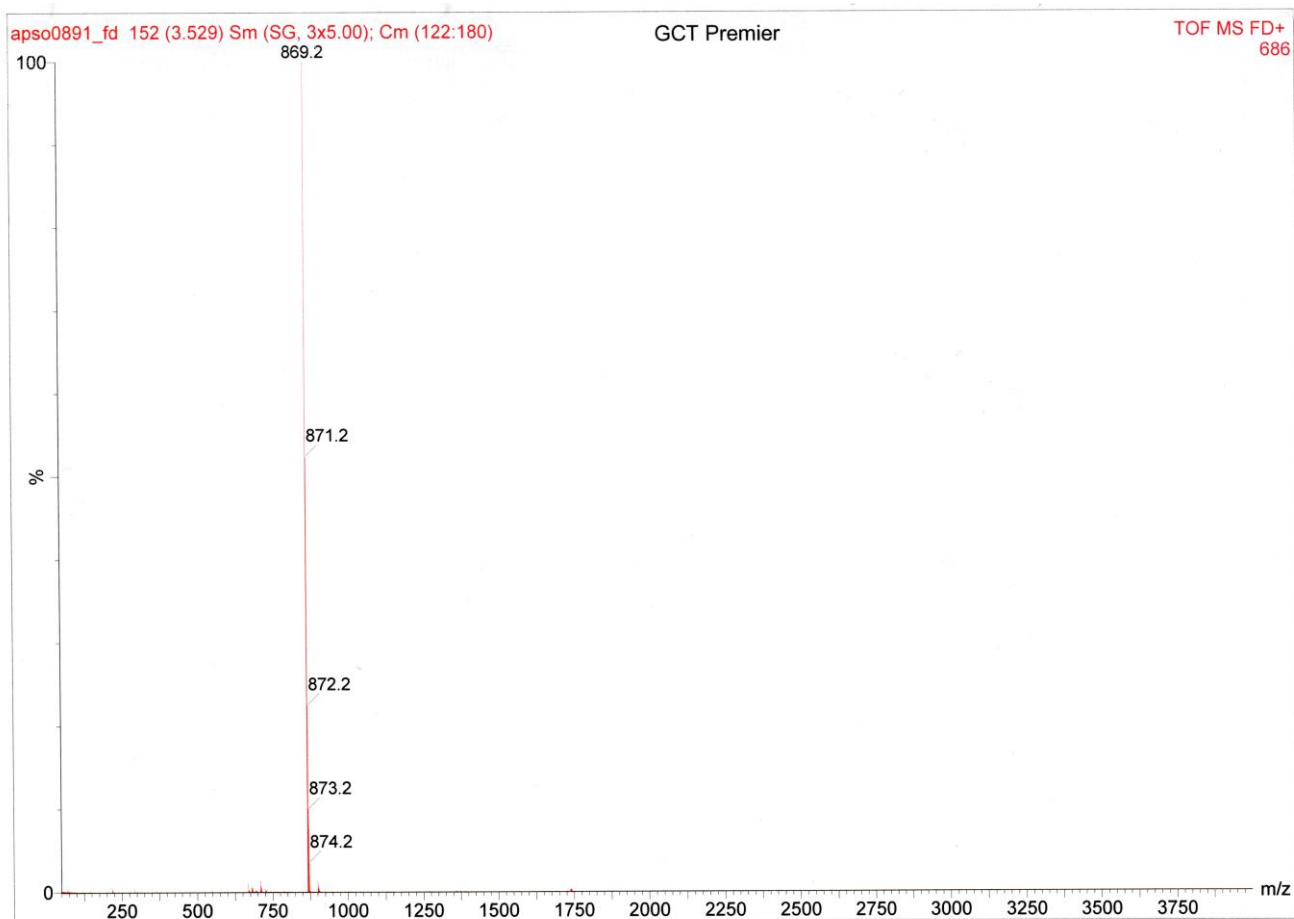


Figure 9. MS spectrum of product **10** (FD technique; positive ions mode).

[2-(Cyanomethyl)-3-nitro-5,10,15,20-tetraphenylporphyrinato]copper(II) (11)

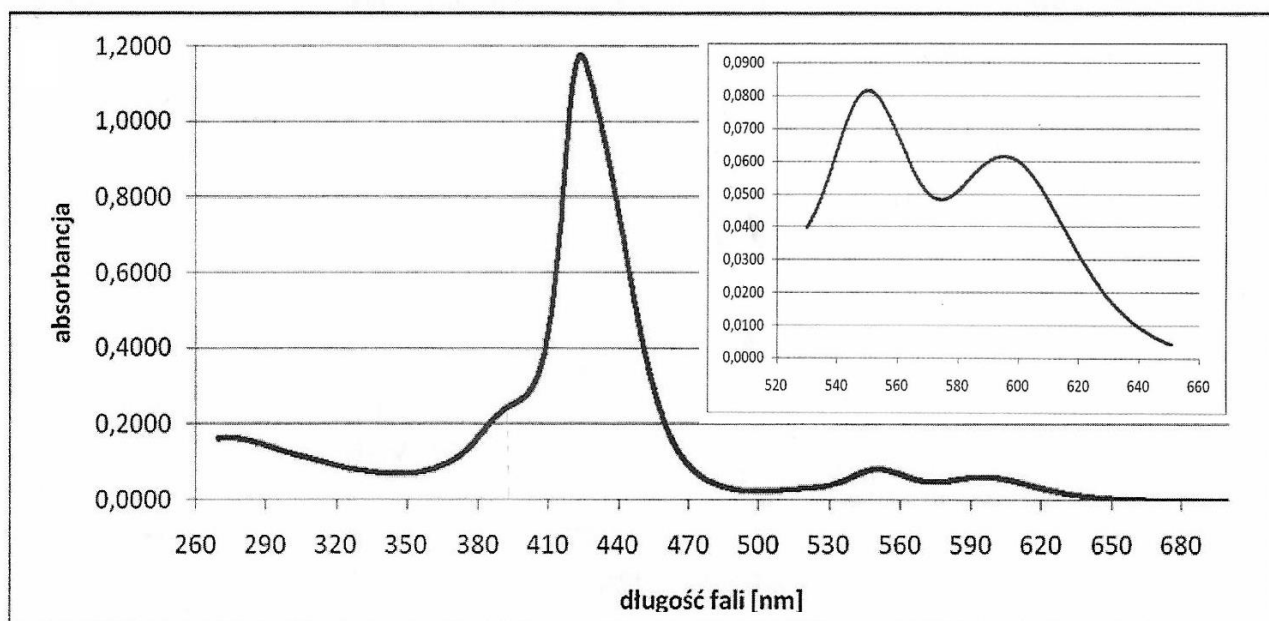


Figure 10. UV-vis spectrum of product **11**.

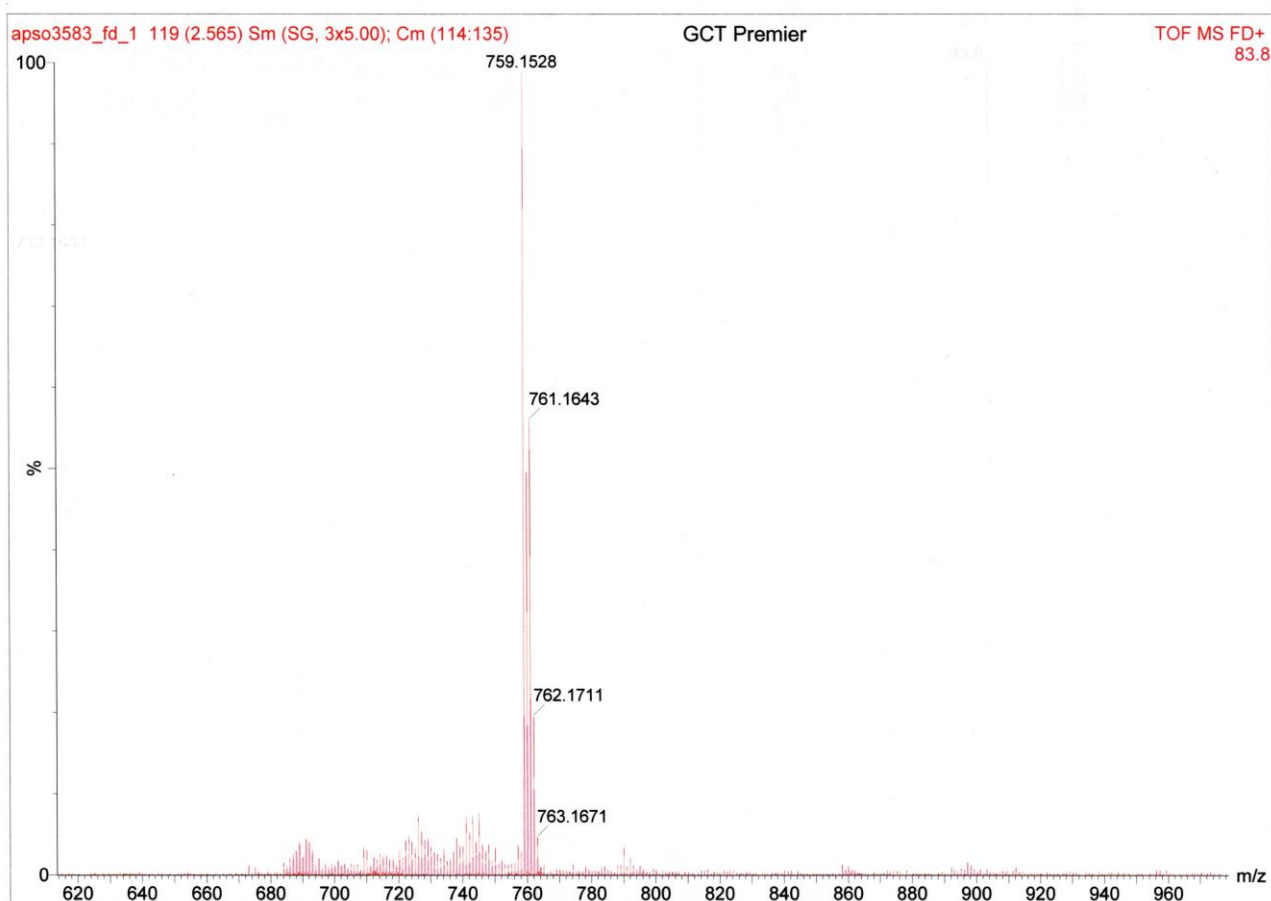


Figure 11. MS spectrum of product **11** (FD technique; positive ions mode).

{2-Nitro-3-[(toluene-4-sulphonyl)methyl]-5,10,15,20-tetraphenylporphyrinato}copper(II) (12)

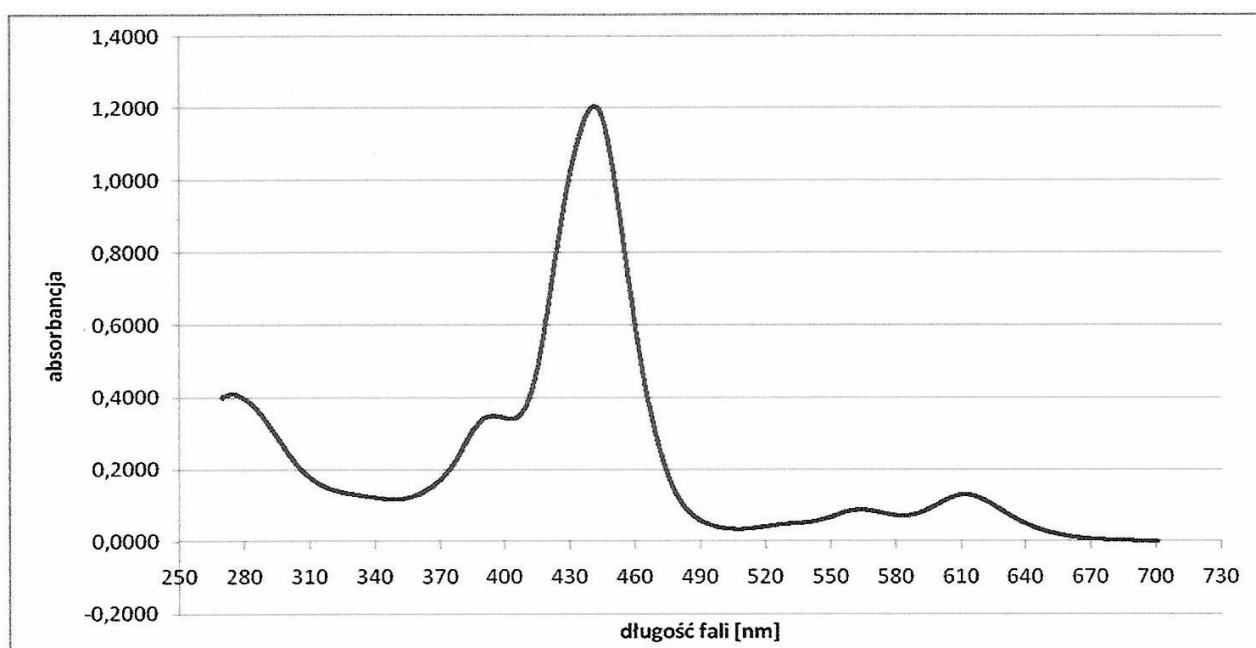


Figure 12. UV-vis spectrum of product **12**.

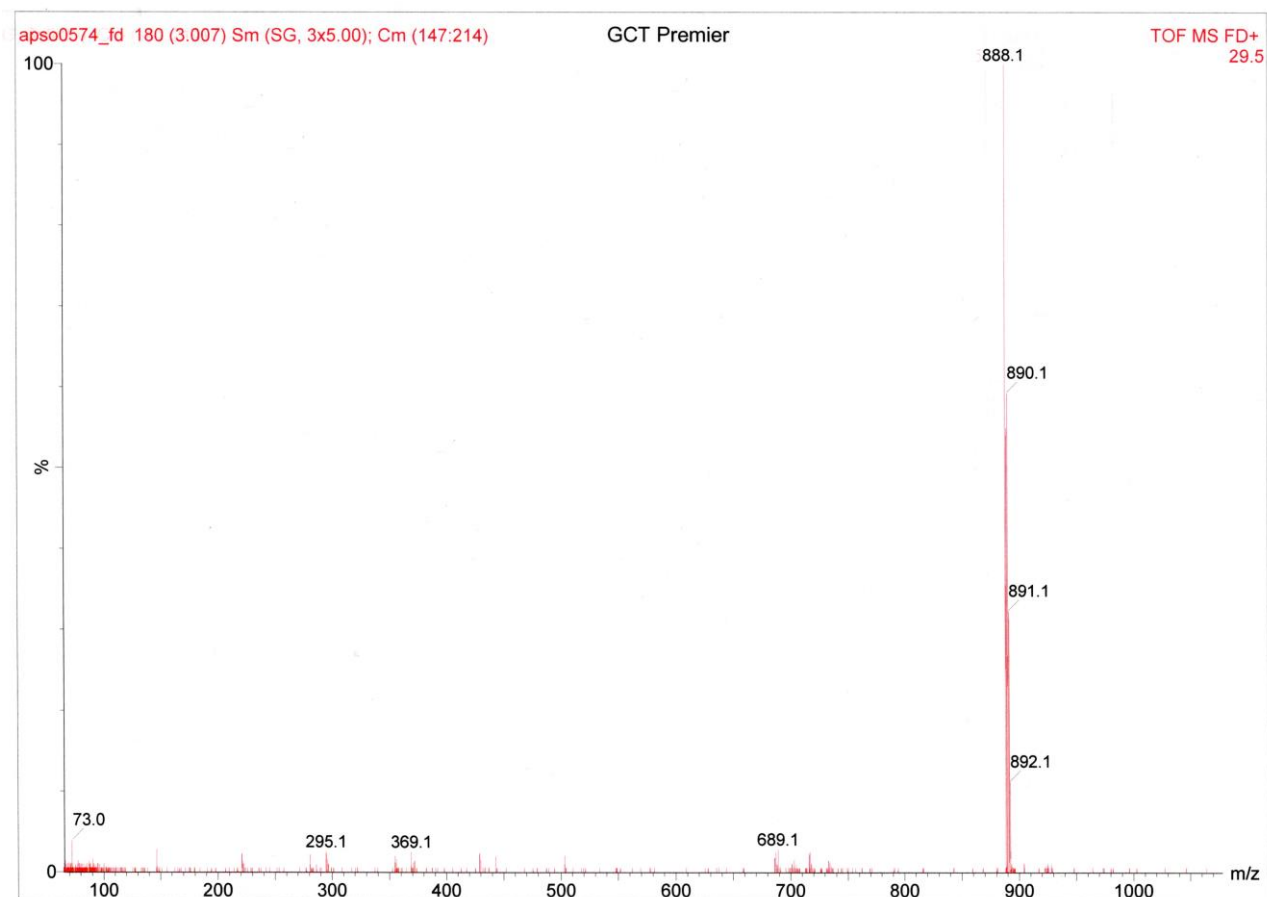


Figure 13. MS spectrum of product **12** (FD technique; positive ions mode).

{2-Nitro-3-[(toluene-4-sulphonyl)methyl]-5,10,15,20-tetraphenylporphyrinato}cobalt(II) (13)

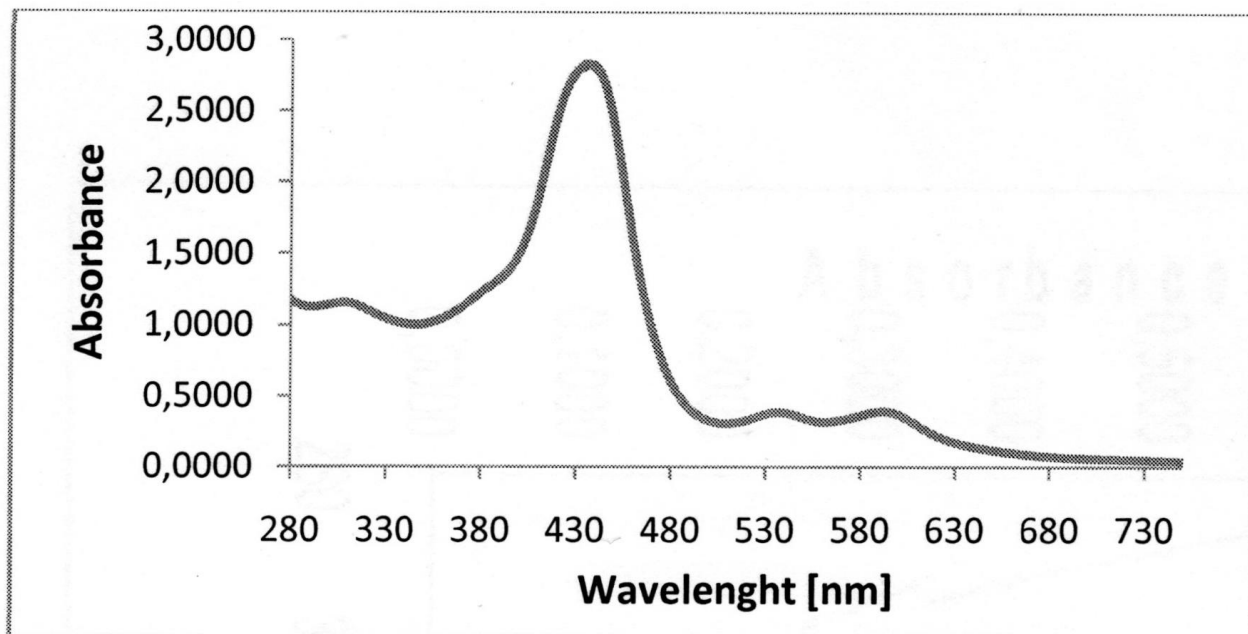


Figure 14. UV-vis spectrum of product **13**.

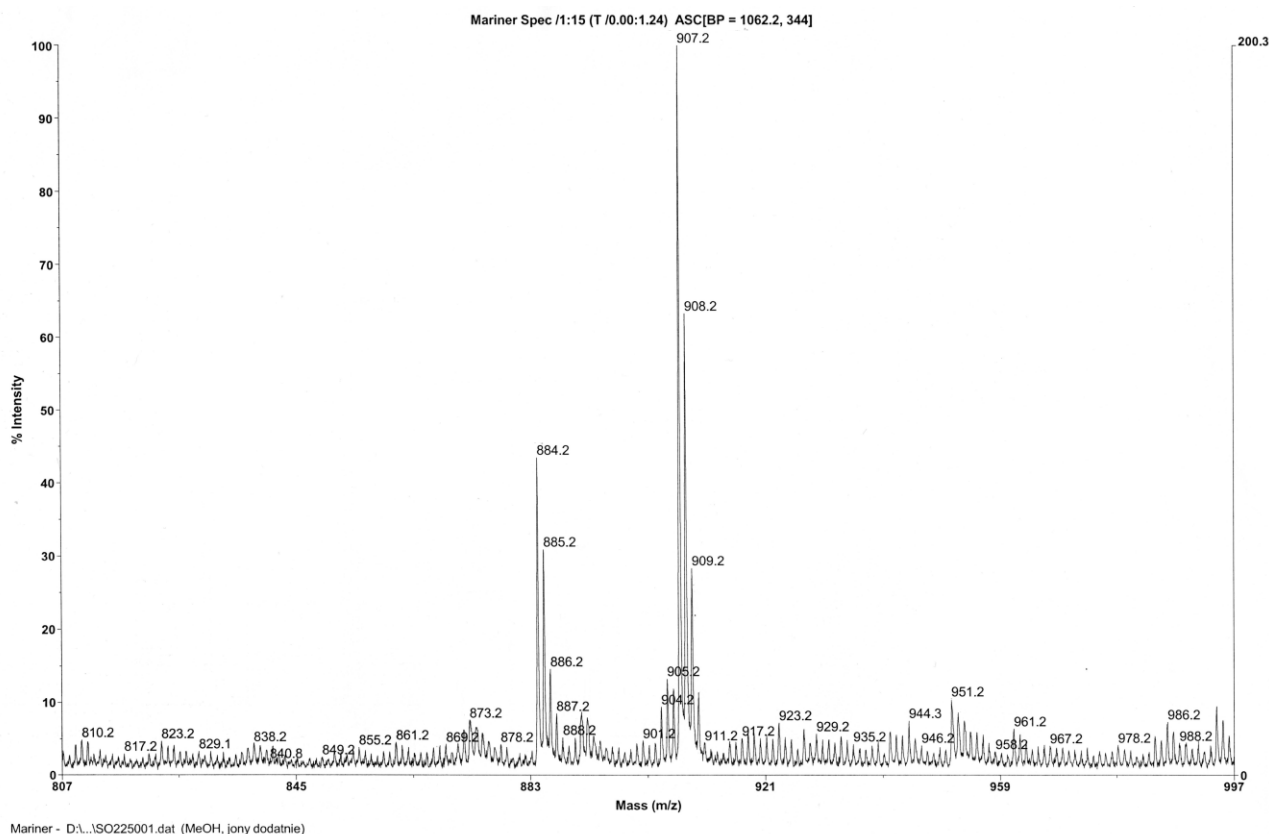


Figure 15. MS spectrum of product **13** (ESI technique; positive ions mode in MeOH).

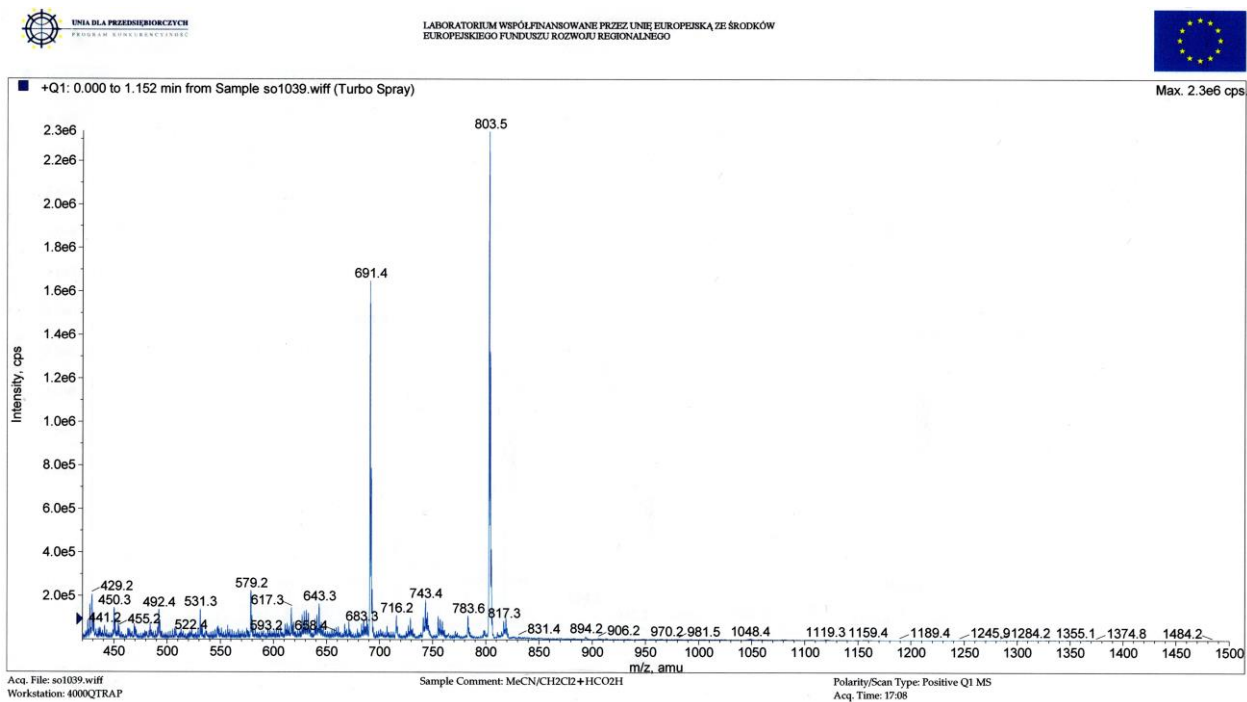


Figure 16. MS spectrum of product **13** (ESI technique; positive ions mode in MeCN/CH₂Cl₂+HCO₂H).

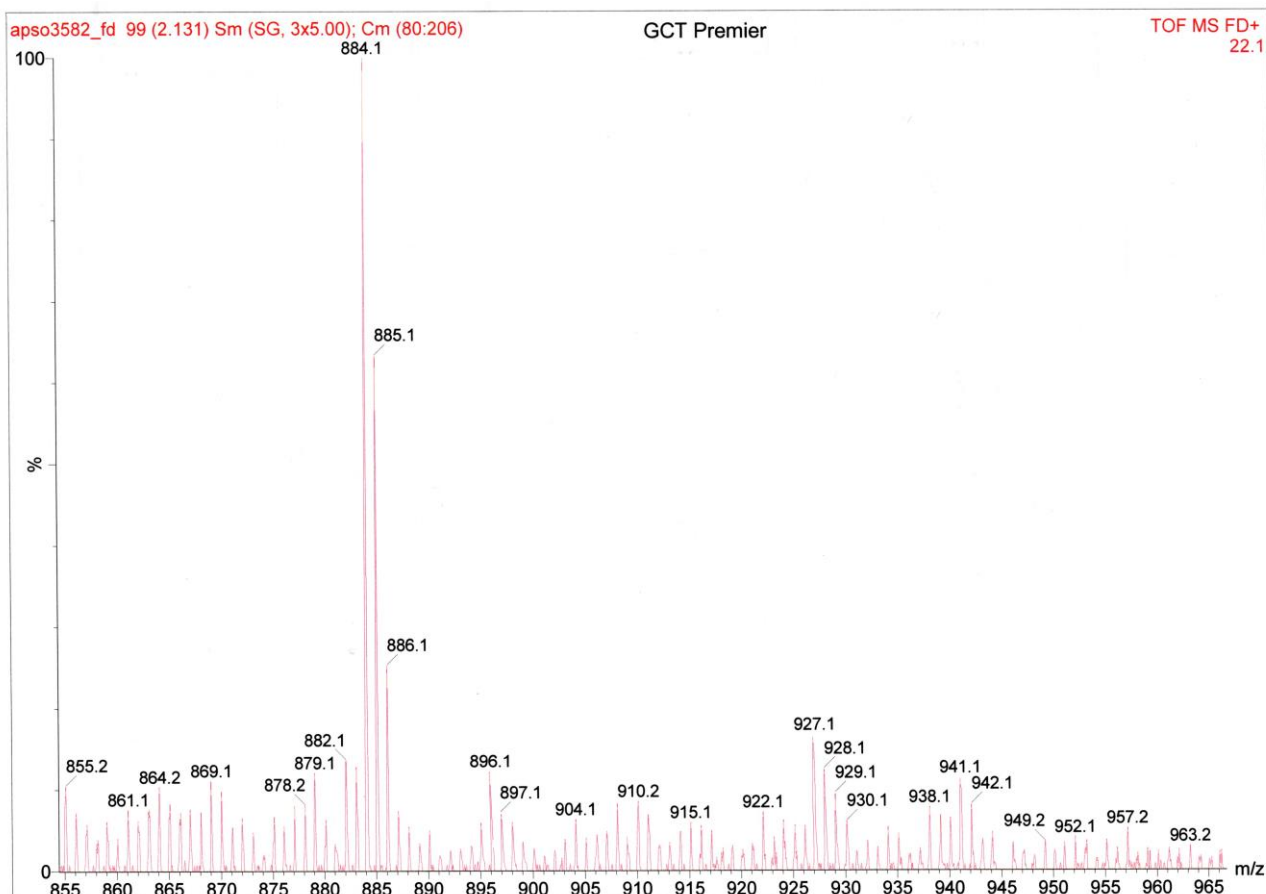


Figure 17. MS spectrum of product **13** (FD technique; positive ions mode).

Product 14

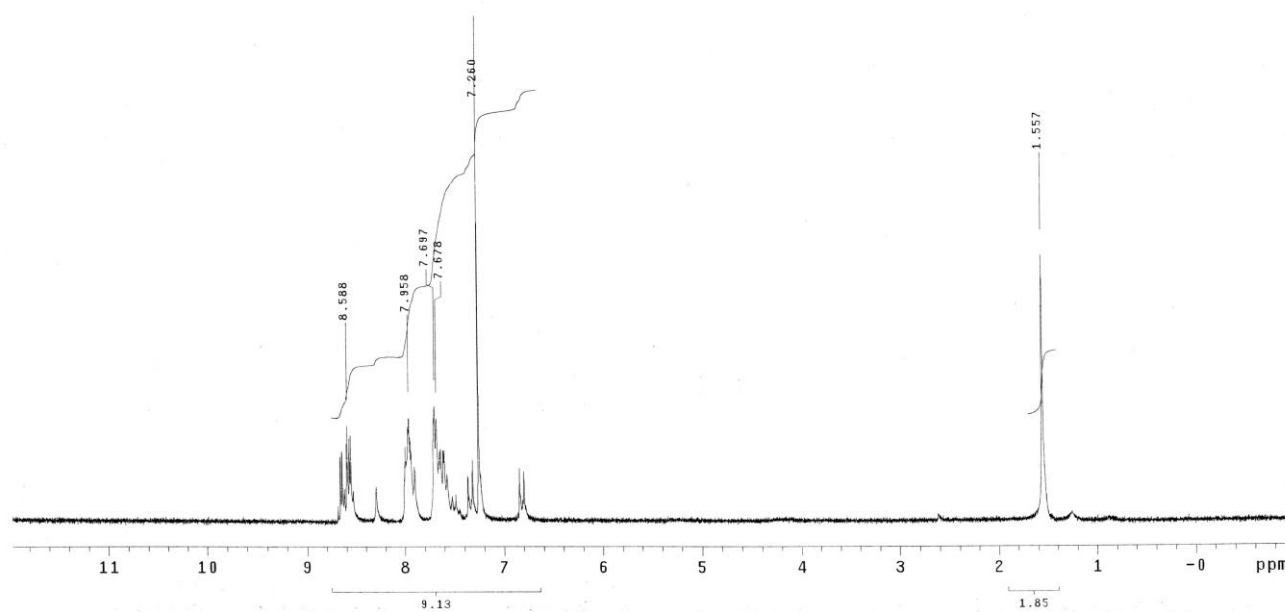


Figure 18. ¹H NMR spectrum of product 14.

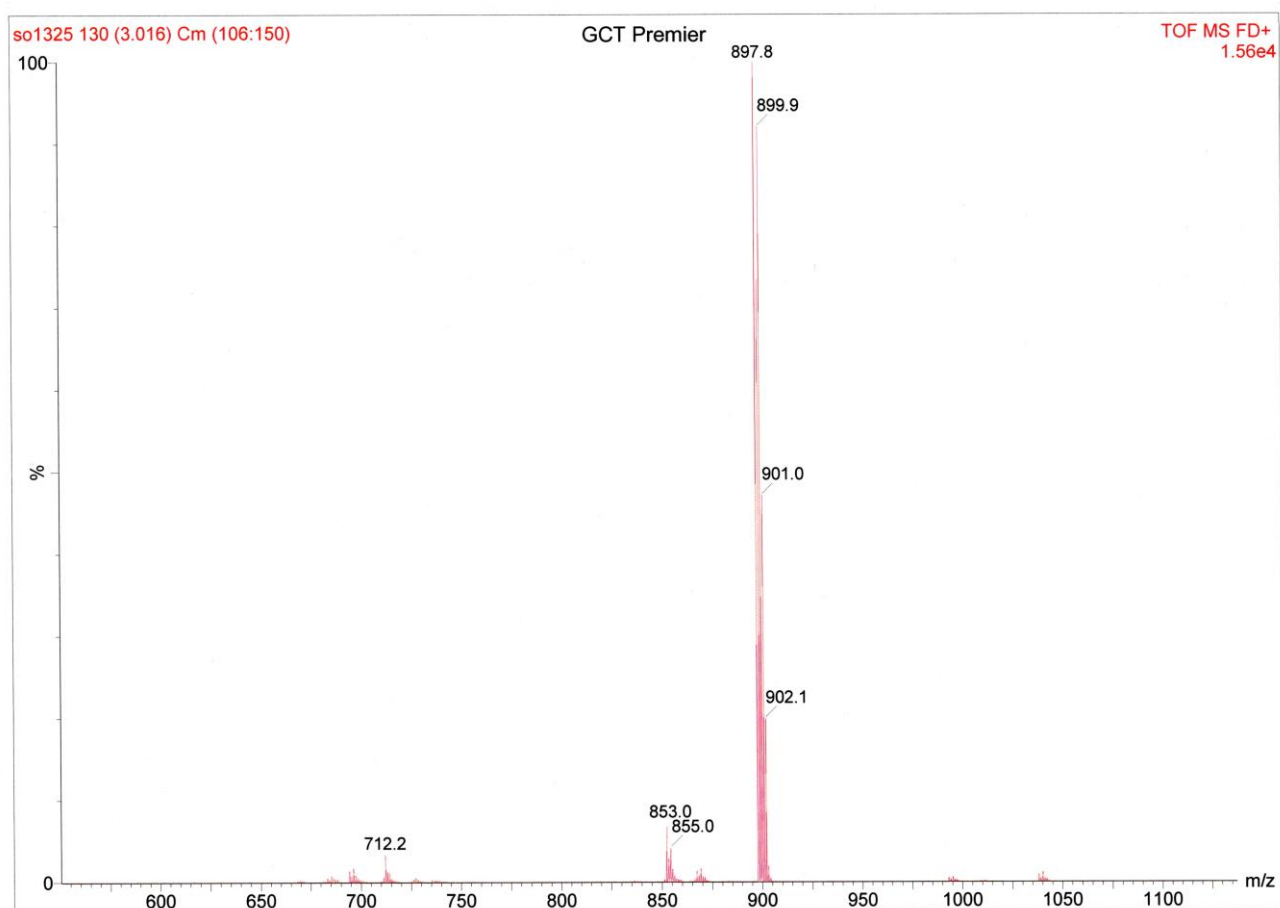


Figure 19. MS spectrum of product 14 (FD technique; positive ions mode).

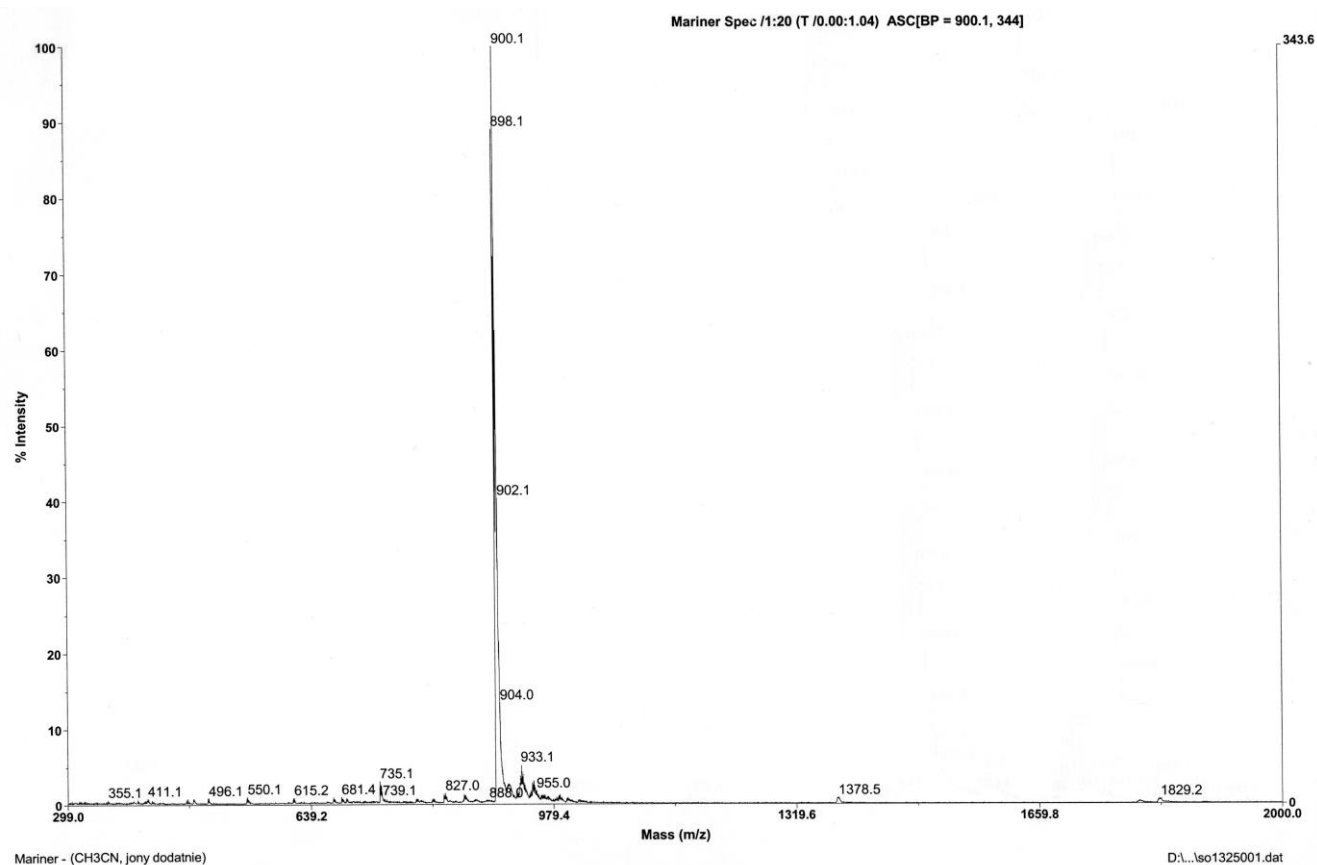


Figure 20. MS spectrum of product **14** (ESI technique; positive ions mode).

Product 15

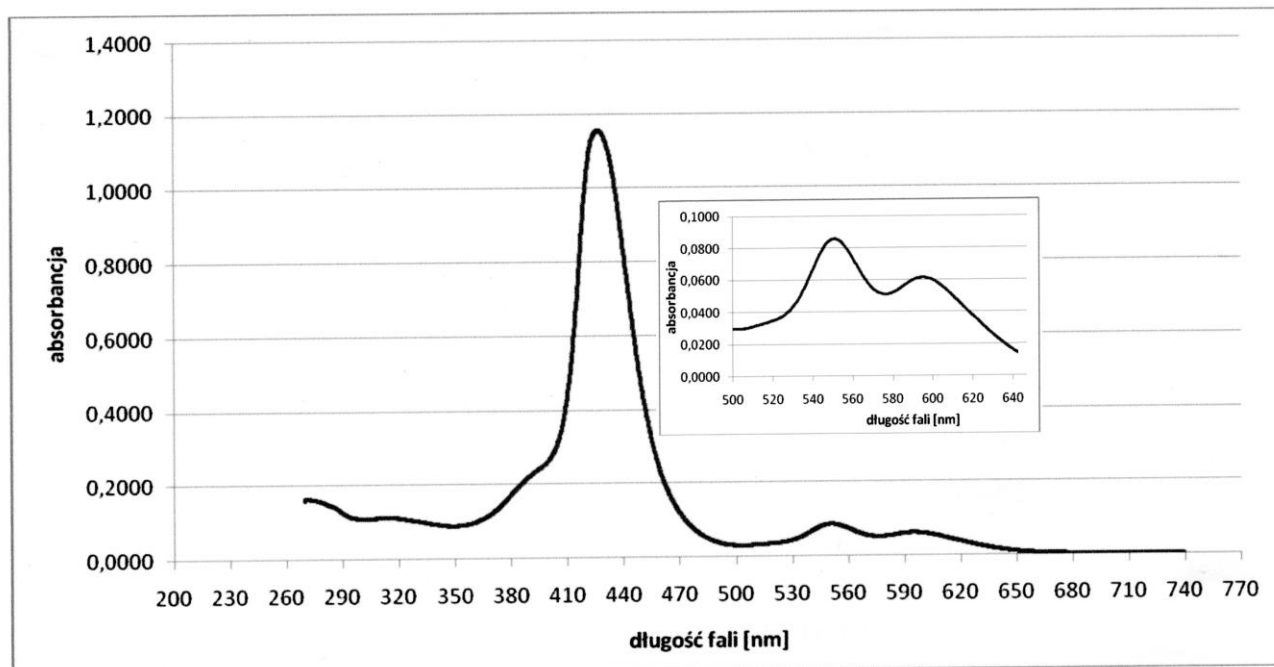


Figure 21. UV-vis spectrum of product 15.

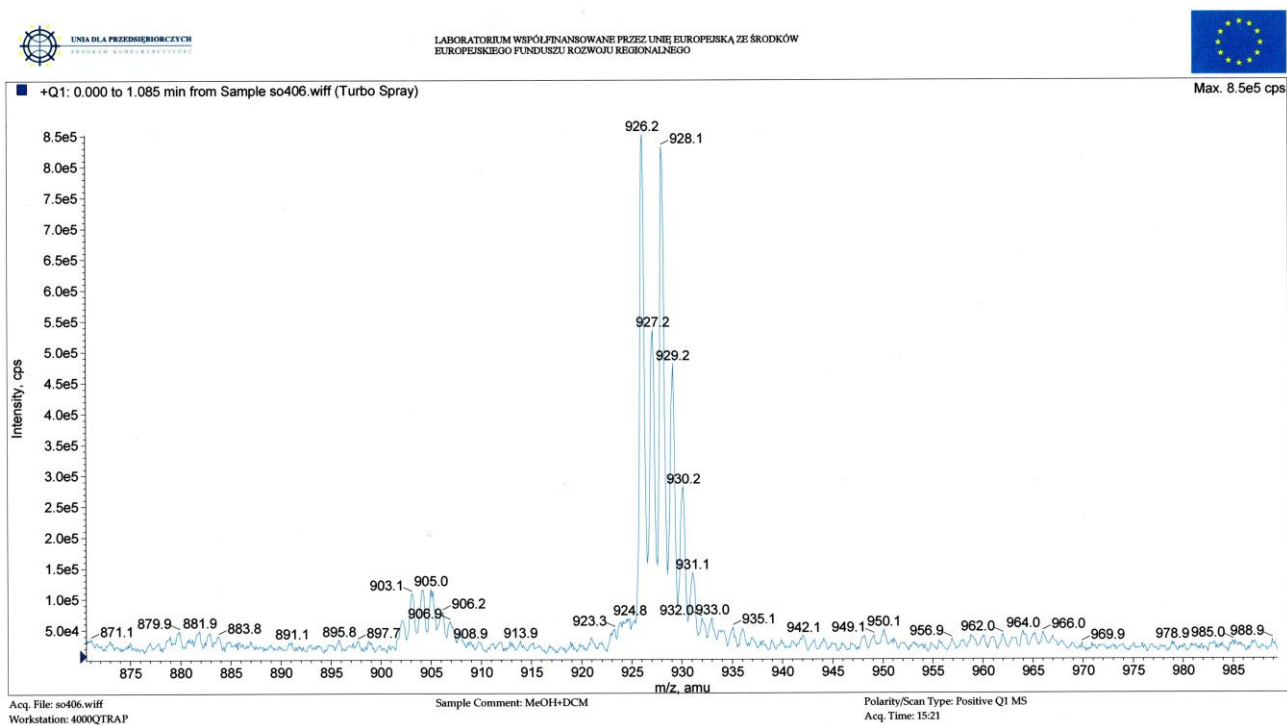


Figure 22. MS spectrum of product 15 (ESI technique; positive ions mode).

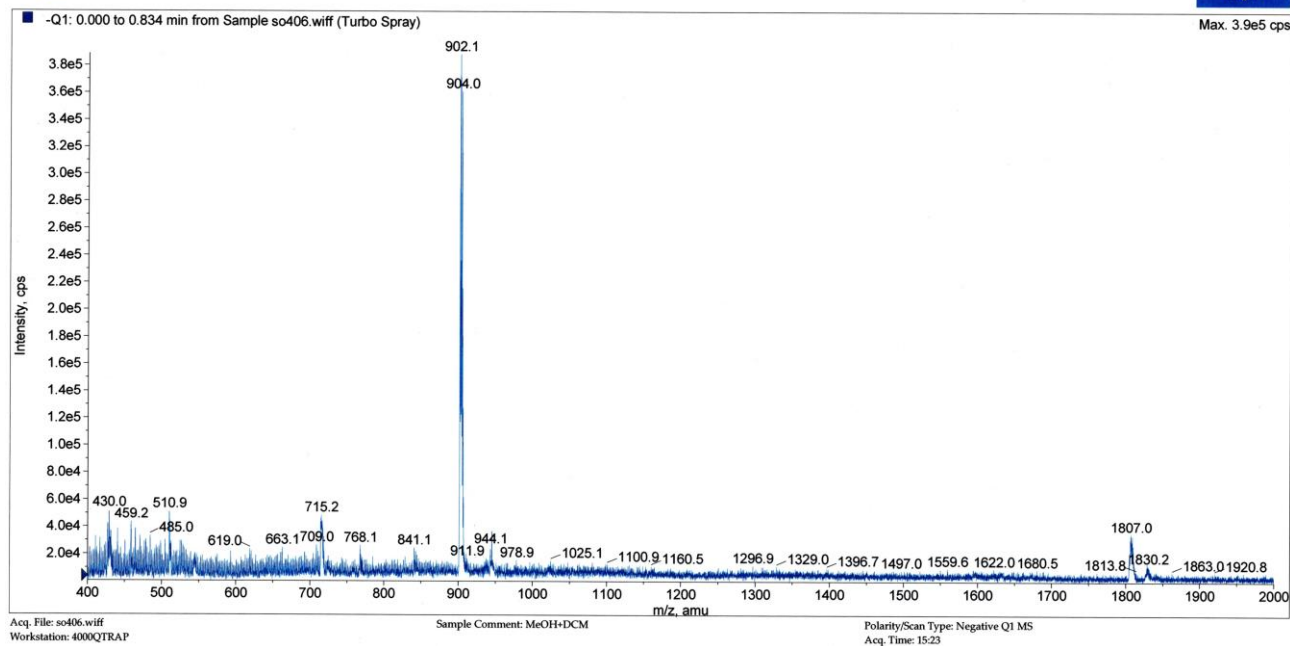


Figure 23. MS spectrum of product **15** (ESI technique; negative ions mode).

Product 16

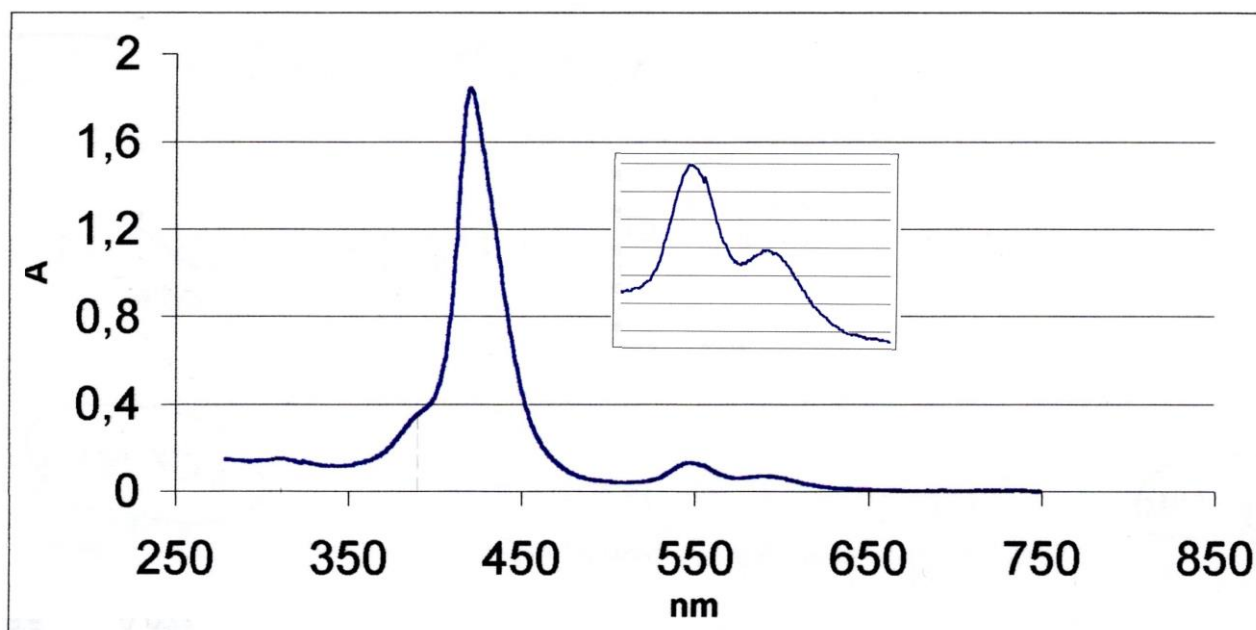


Figure 24. UV-vis spectrum of product 16.

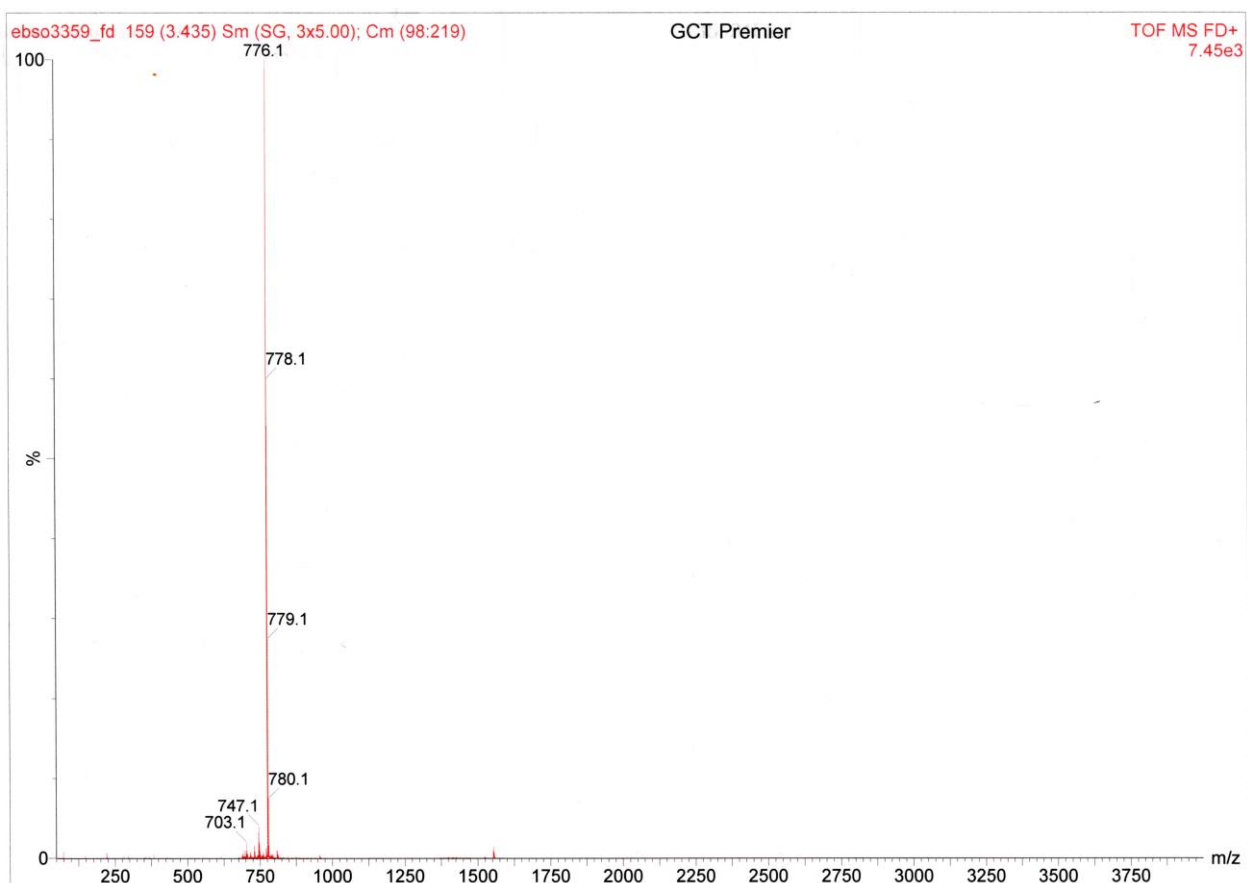


Figure 25. MS spectrum of product 16 (FD technique; positive ions mode).

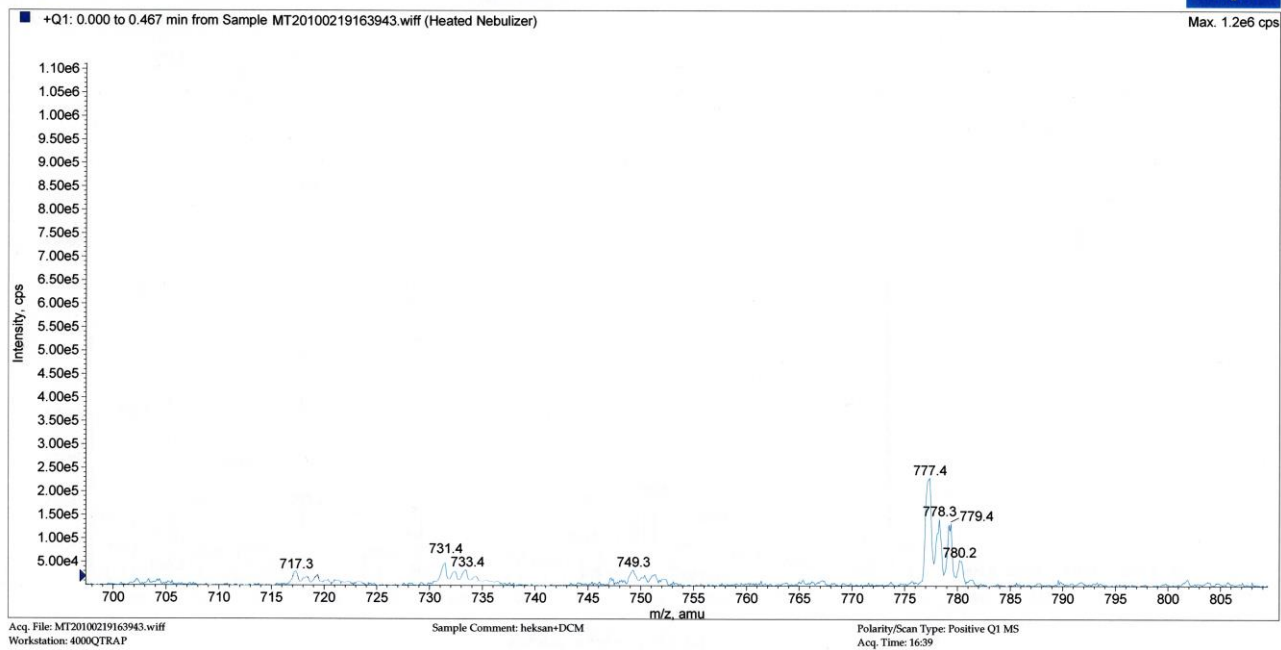


Figure 26. MS spectra of product **16** (APPI technique; positive ions mode).

Product 17

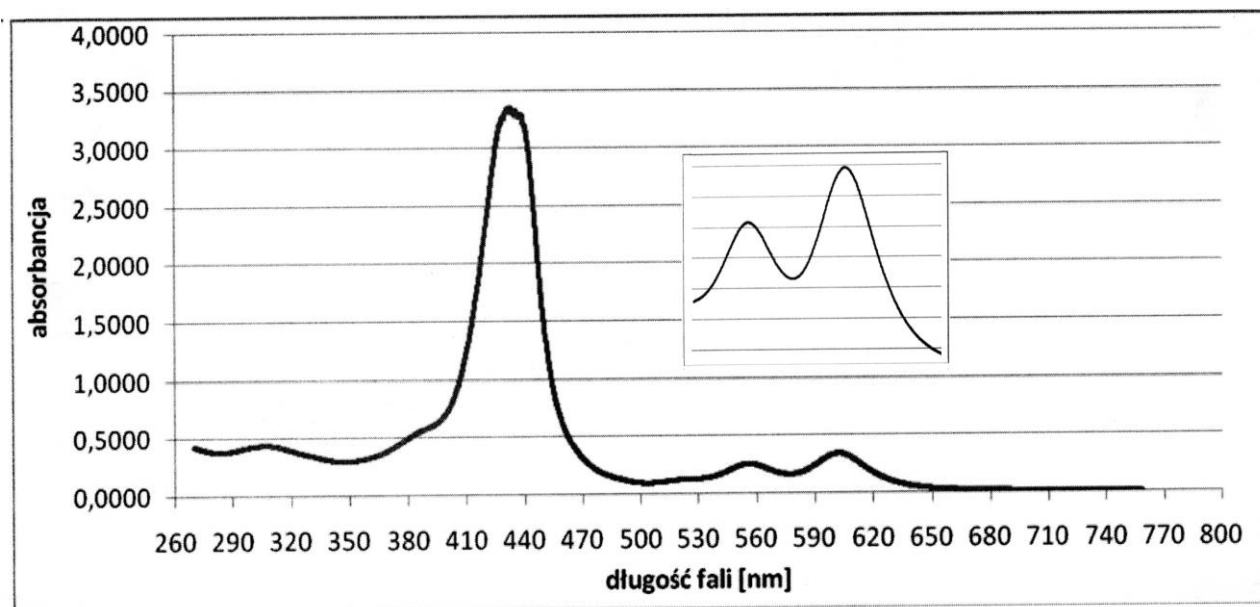


Figure 27. UV-vis spectrum of product 17.

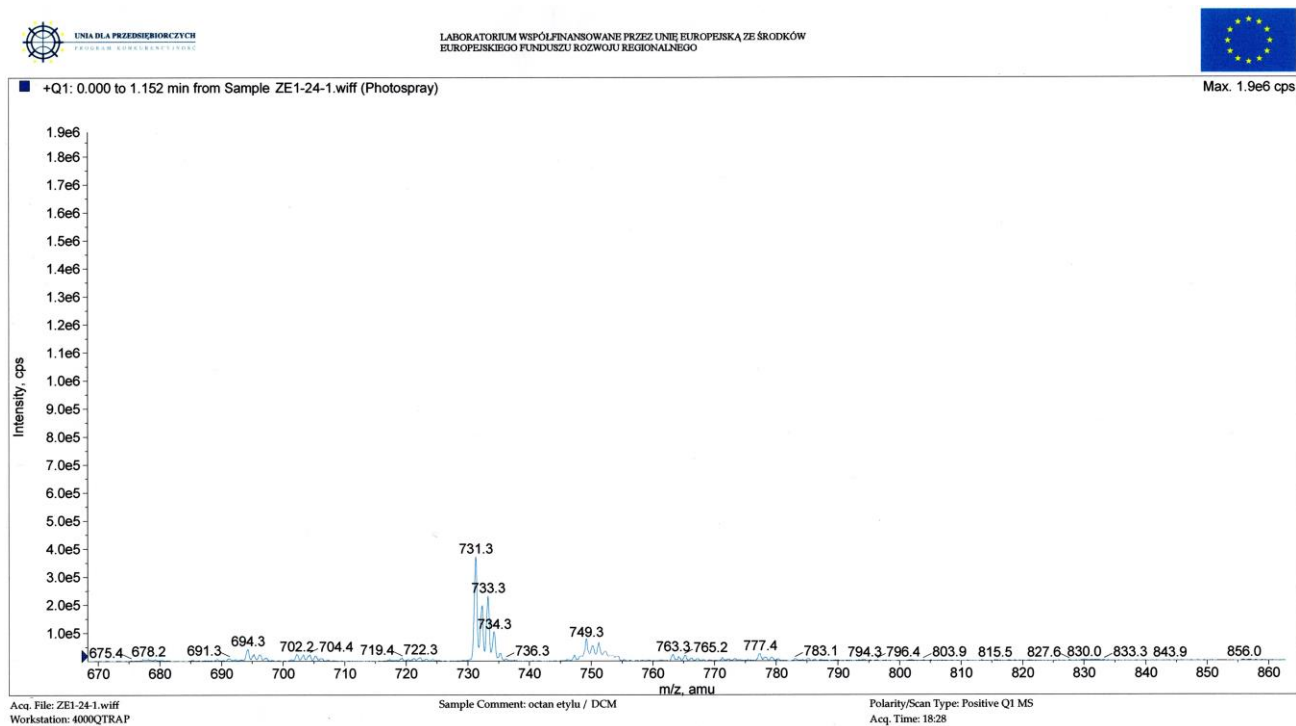


Figure 28. MS spectrum of product 17 (ESI technique; positive ions mode).