Electronic Supplementary Information

The effect of number of carbohydrate moieties on the azaphthalocyanine properties

Veronika Novakova,*[a] Rabia Zeynep Uslu Kobak,[b] Radim Kučera,[c] Kamil Kopecký,[c] Miroslav Miletin,[c] Veronika Krepsova,[a] Jana Ivincová[c] and Petr Zimcik[c]

[a] *Department of Biophysics and Physical Chemistry, Faculty of Pharmacy in Hradec Kralove, Charles University in Prague, Heyrovskeho 1203, 50005, Hradec Kralove, Czech Republic. Fax: +420 495067167; Tel: +420 495067380; E-mail: veronika.novakova@faf.cuni.cz*

[b] *Department of Chemistry, Faculty of Arts and Sciences, Technical University of Istanbul, TR34469 Maslak, Istanbul, Turkey*

[c] *Department of Pharmaceutical Chemistry and Drug Analysis, Faculty of Pharmacy in Hradec Kralove, Charles University in Prague, Heyrovskeho 1203, 50005, Hradec Kralove, Czech Republic. Fax: +420 495067167; Tel: +420 495067257;*

Content:

Normalized absorption spectra of 2-10 and 13 in DMF

For all spectra: AzaPc bearing azide is in **red**, protected-galactose derivatives **black** and deprotected-galactose derivatives **green**.Spectra were normalized to the same absorption in Q-band.

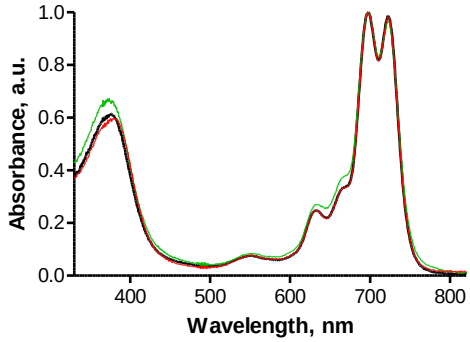


Figure S1: Normalized absorption spectra of **2** (red), **6** (black) and **10** (green).

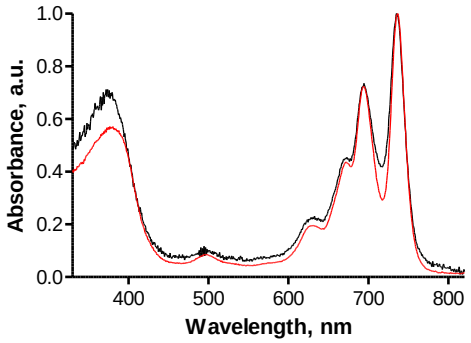


Figure S2: Normalized absorption spectra of **3** (red), **7** (black).

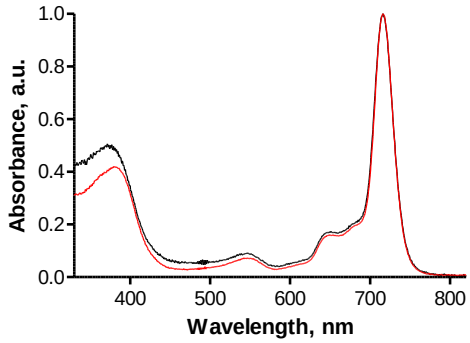


Figure S3: Normalized absorption spectra of **4** (red) and **8** (black).

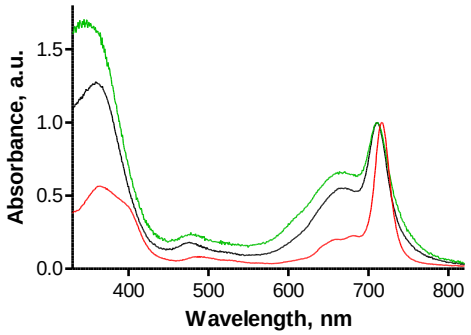


Figure S4: Normalized absorption spectra of **5** (red), **9** (black) and **13** (green). Low intensity of the Q-band if compared with B-band and its broadness in compounds **9** and **13** indicates extensive aggregation.

Fluorescence emission and excitation spectra in DMF

For all spectra: λ_{exc} = 605 nm, excitation spectra taken when observing fluorescence signal at 715 nm (**18**), 770 nm (**6**, **10**) or 780 nm (**7**, **8**, **9**).

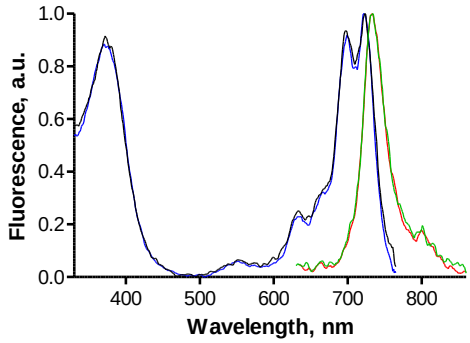


Figure S6: Normalized emission spectra of **6** (red) and **10** (green) and excitation spectra of **6** (blue), **10** (black).

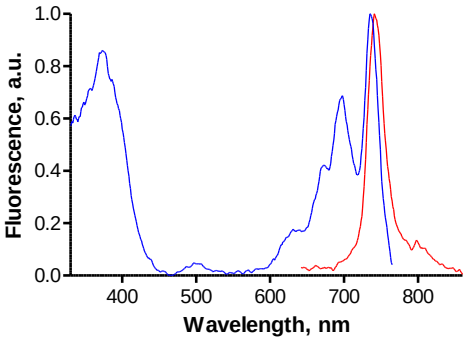


Figure S7: Normalized emission (red) and excitation spectra (blue) of **7**.

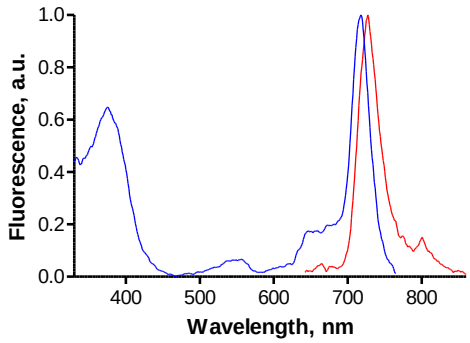


Figure S8: Normalized emission (red) and excitation spectra (blue) of **8**.

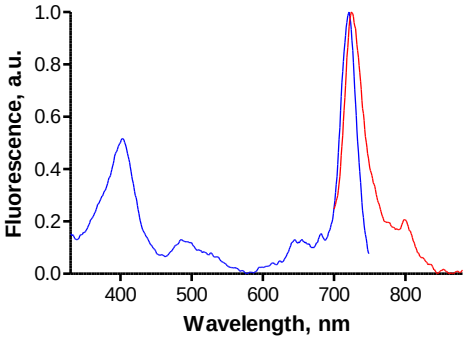


Figure S9: Normalized emission (red) and excitation spectra (blue) of **9**.

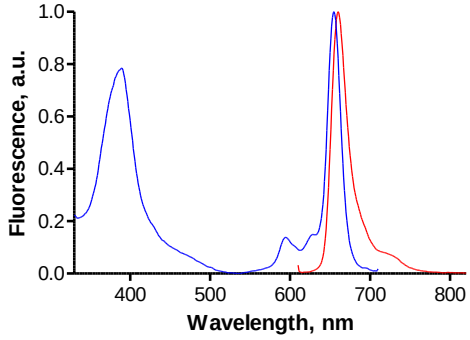


Figure S10: Normalized emission (red) and excitation spectra (blue) of **18**.

NMR spectra of compounds 6-10 and 18

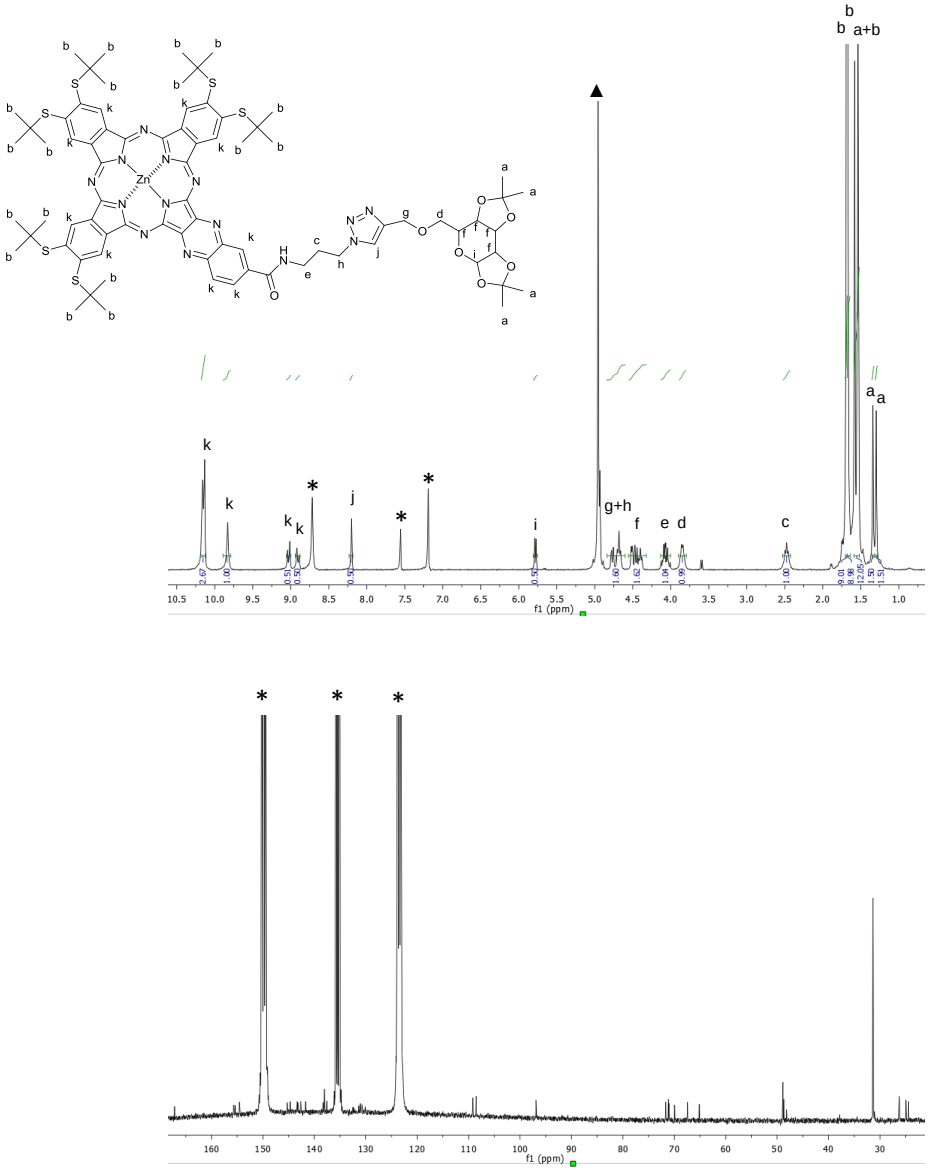


Figure S11: ^{1}H NMR and ^{13}C NMR spectra of **6** in pyridine-d_5. Asterisks indicate solvent signals, ▲ indicates signal of residual water.

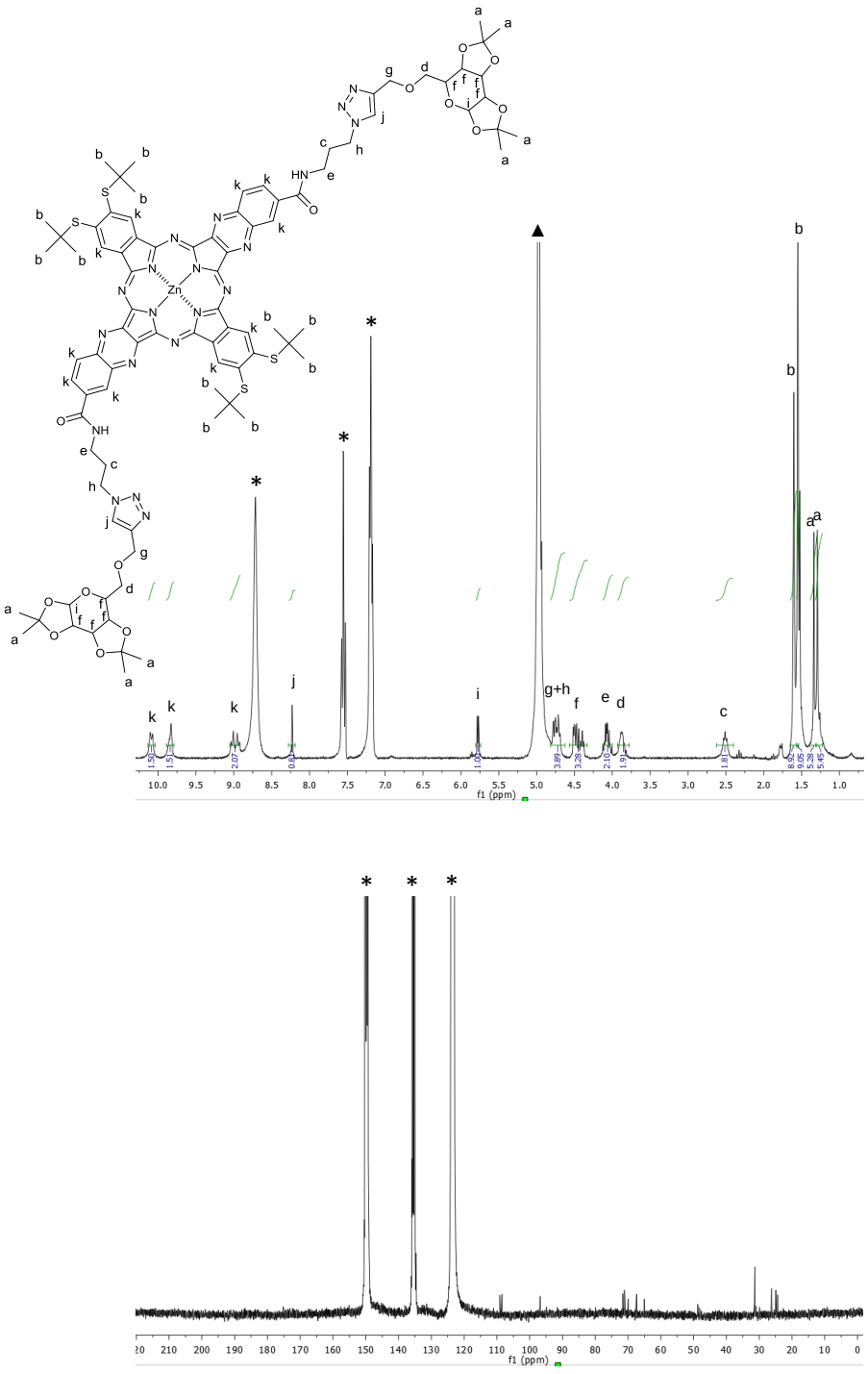


Figure S12: ^{1}H NMR and ^{13}C NMR spectra of **7** in pyridine-d_5. Asterisks indicate solvent signals, ▲ indicates signal of residual water.

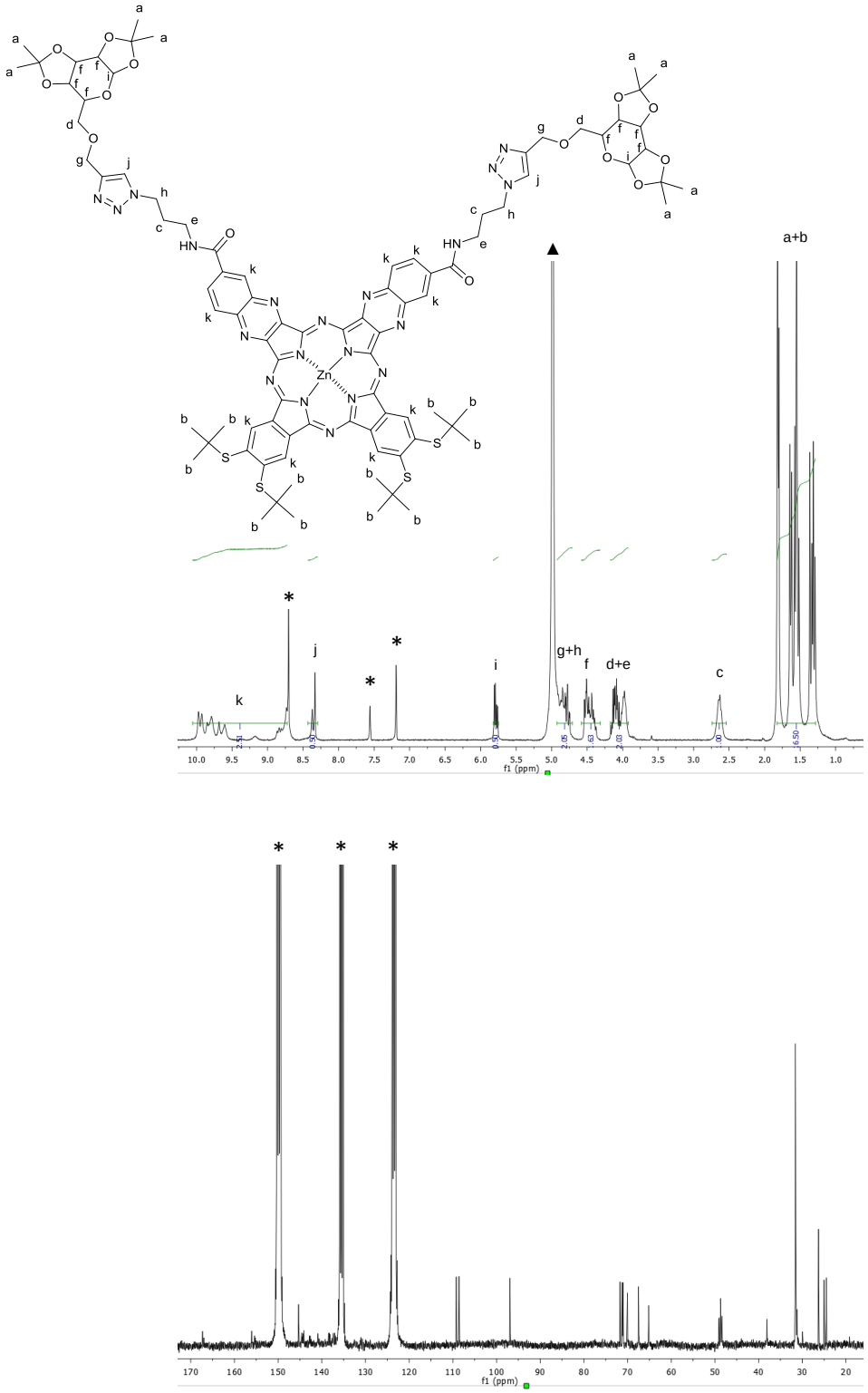


Figure S13: ^{1}H NMR and ^{13}C NMR spectra of **8** in pyridine-d_5. Asterisks indicate solvent signals, ▲ indicates signal of residual water.

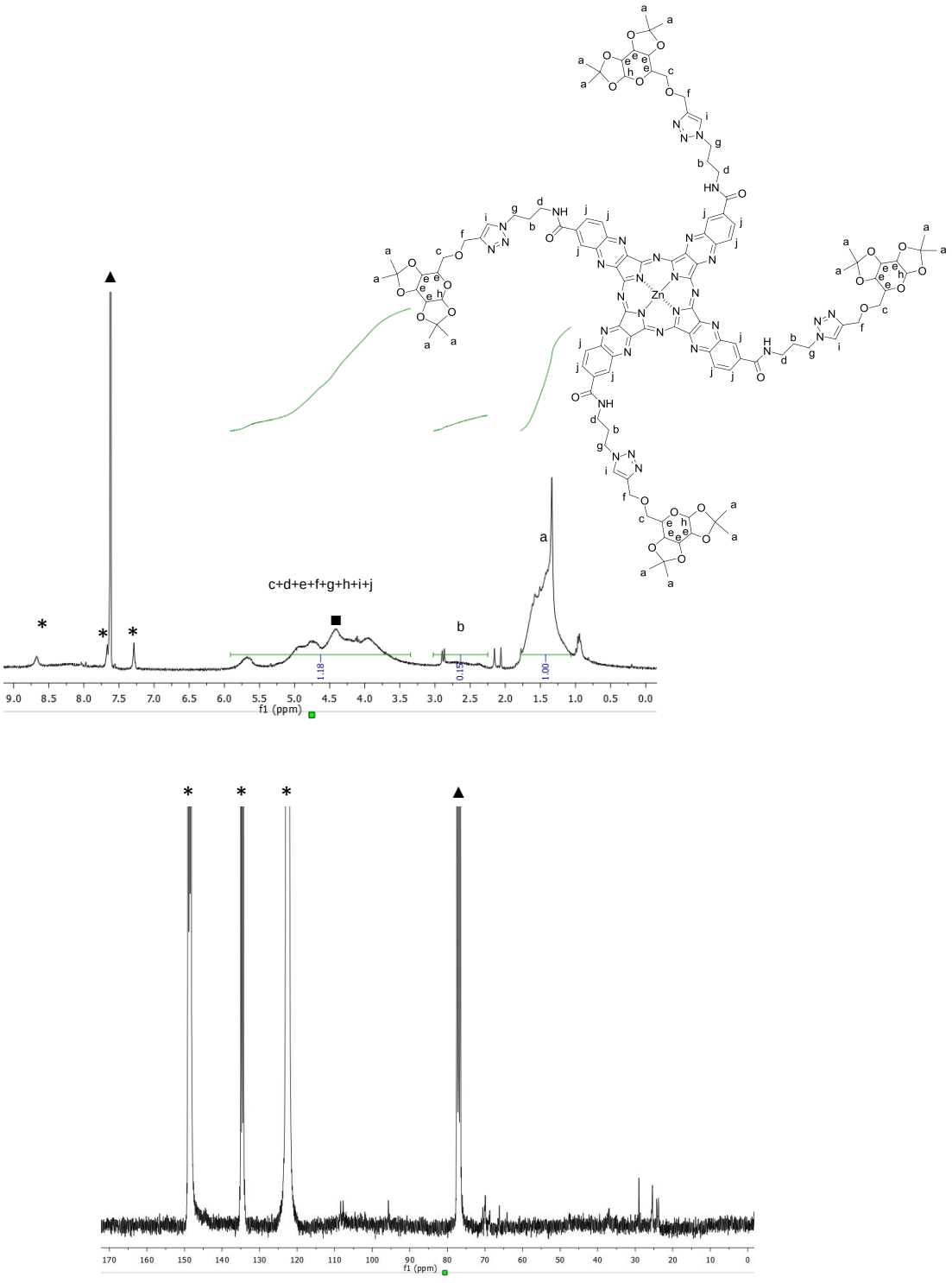


Figure S14: ^{1}H NMR and ^{13}C NMR spectra of **9** in $CDCl_3$/pyridine 3:1. Asterisks and ▲ indicate solvent signals (pyridine and chloroform, respectively), ■ indicates signal of residual water.

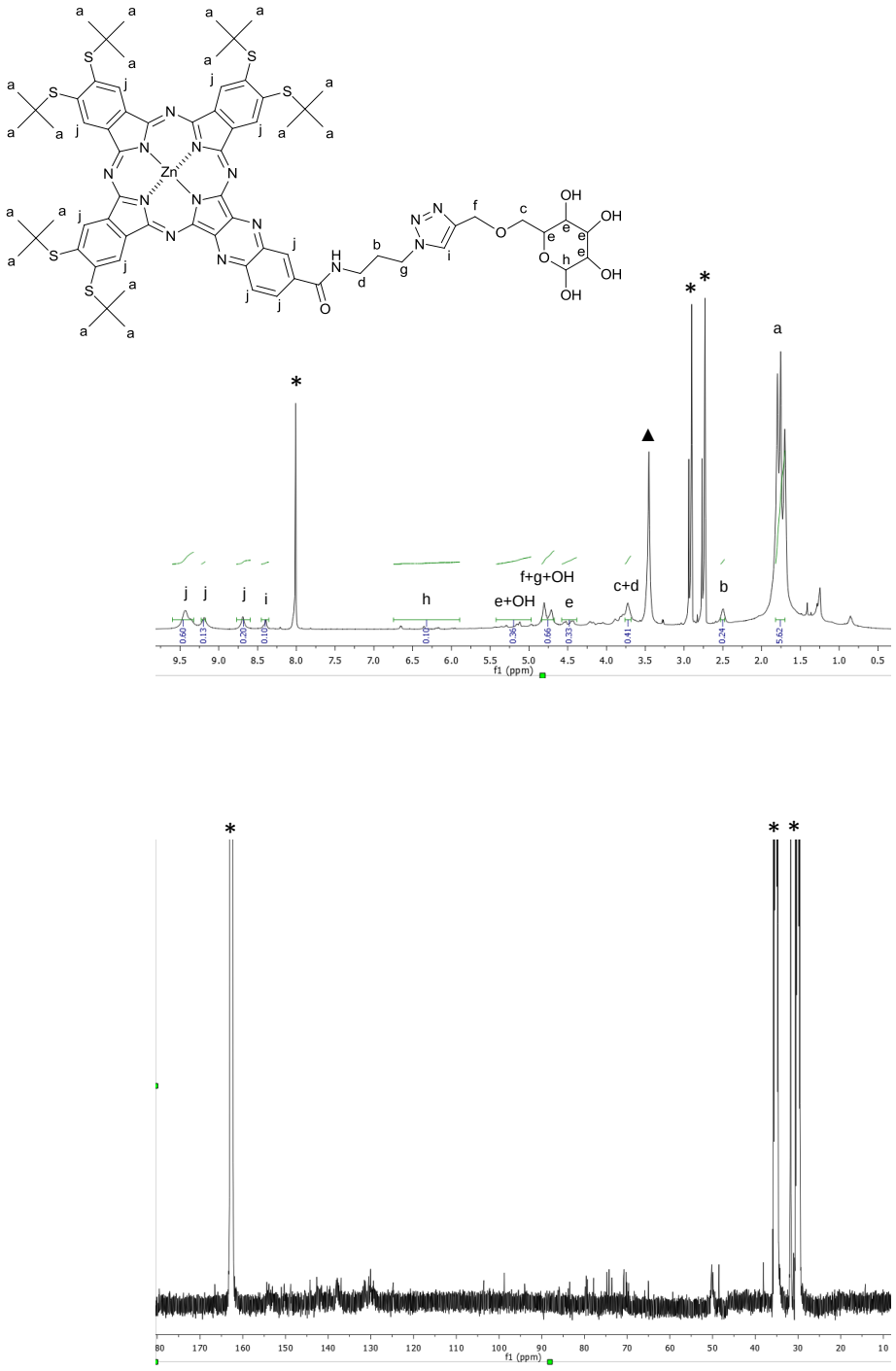


Figure S15: ^{1}H NMR and ^{13}C NMR spectra of **10** in DMF-d_7. Asterisks indicate solvent signals, ▲ indicates signal of residual methanol.

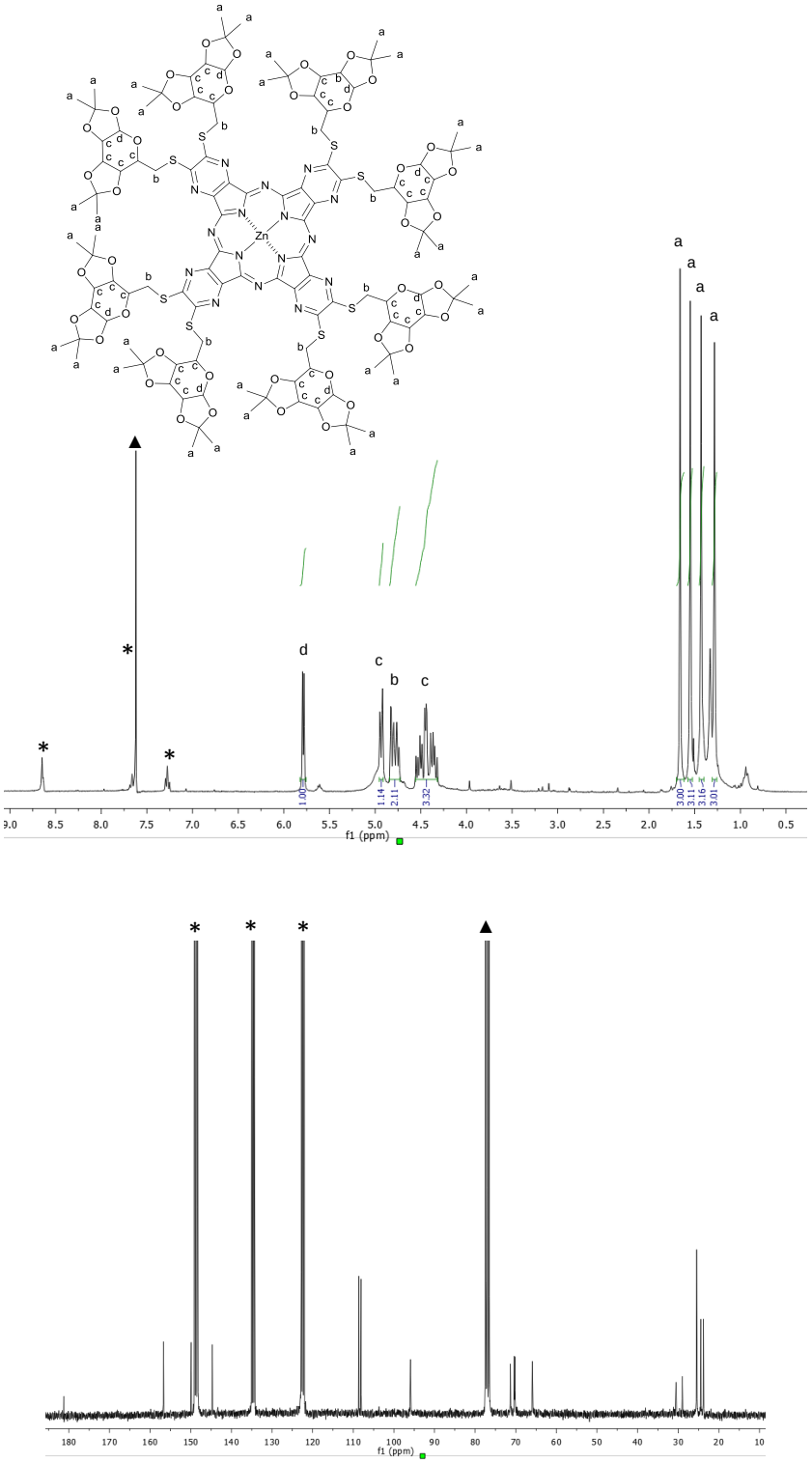
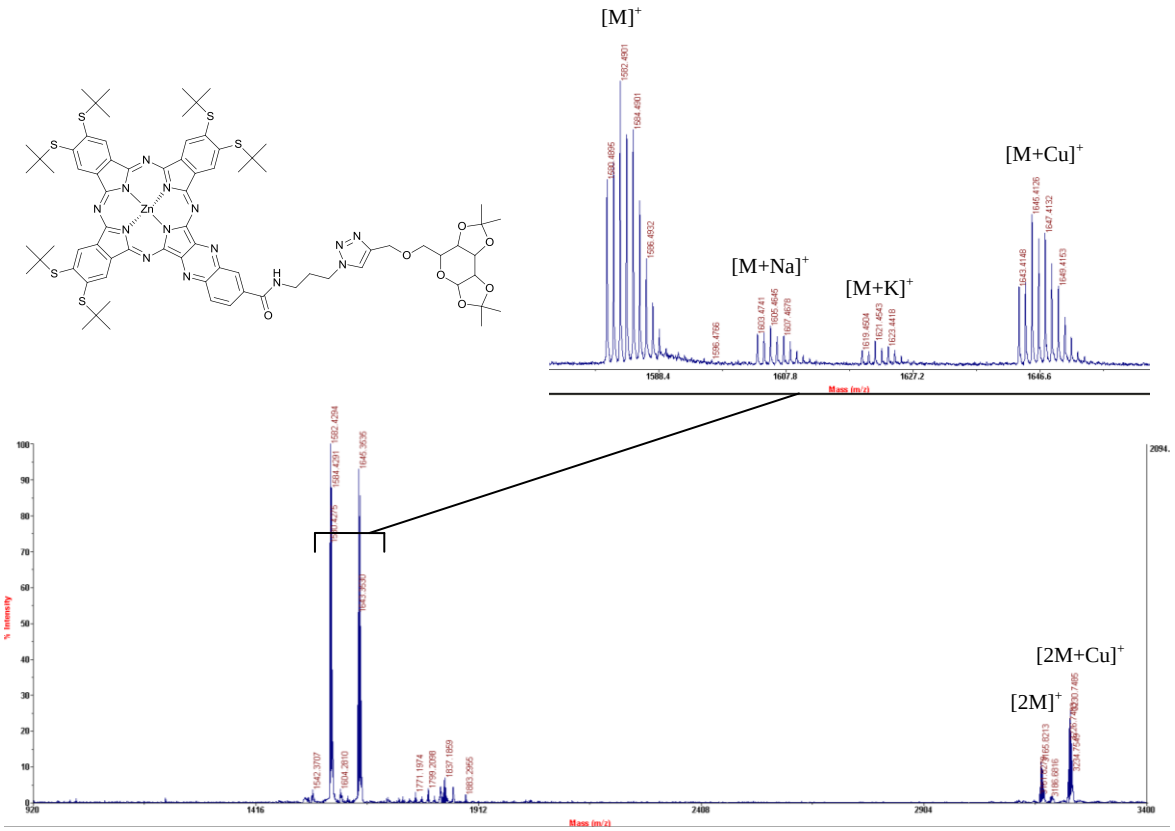
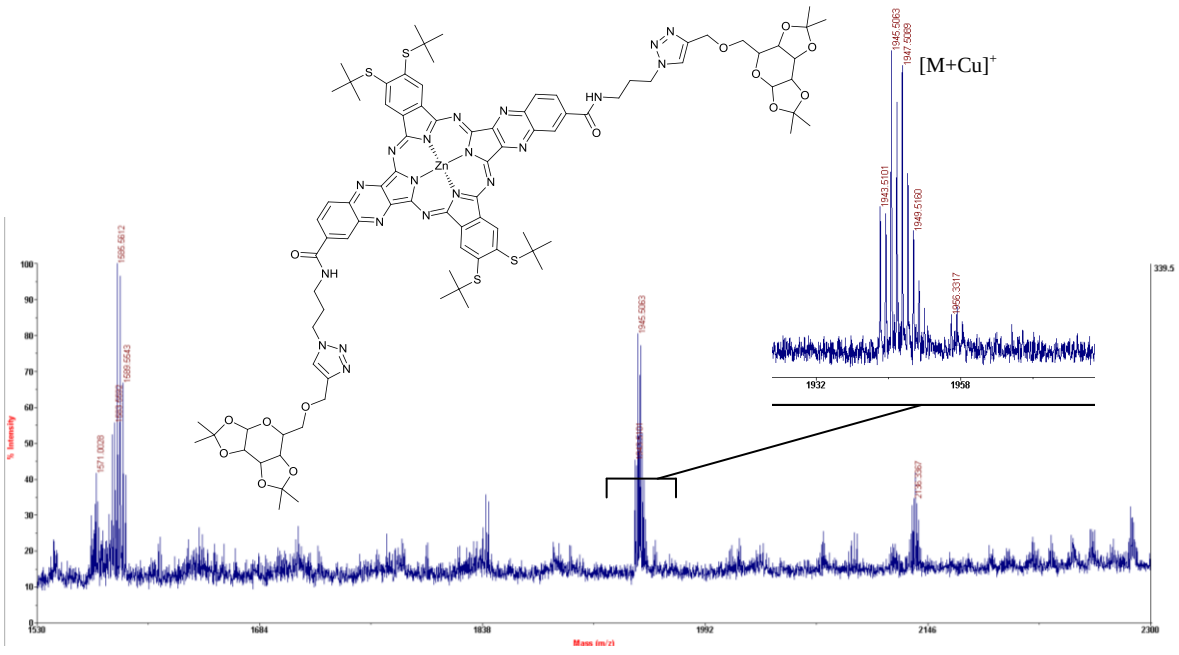


Figure S16: ^{1}H NMR and ^{13}C NMR spectra of **18** in $CDCl_3$/pyridine 3:1. Asterisks and ▲indicate solvent signals (pyridine and chloroform, respectively).

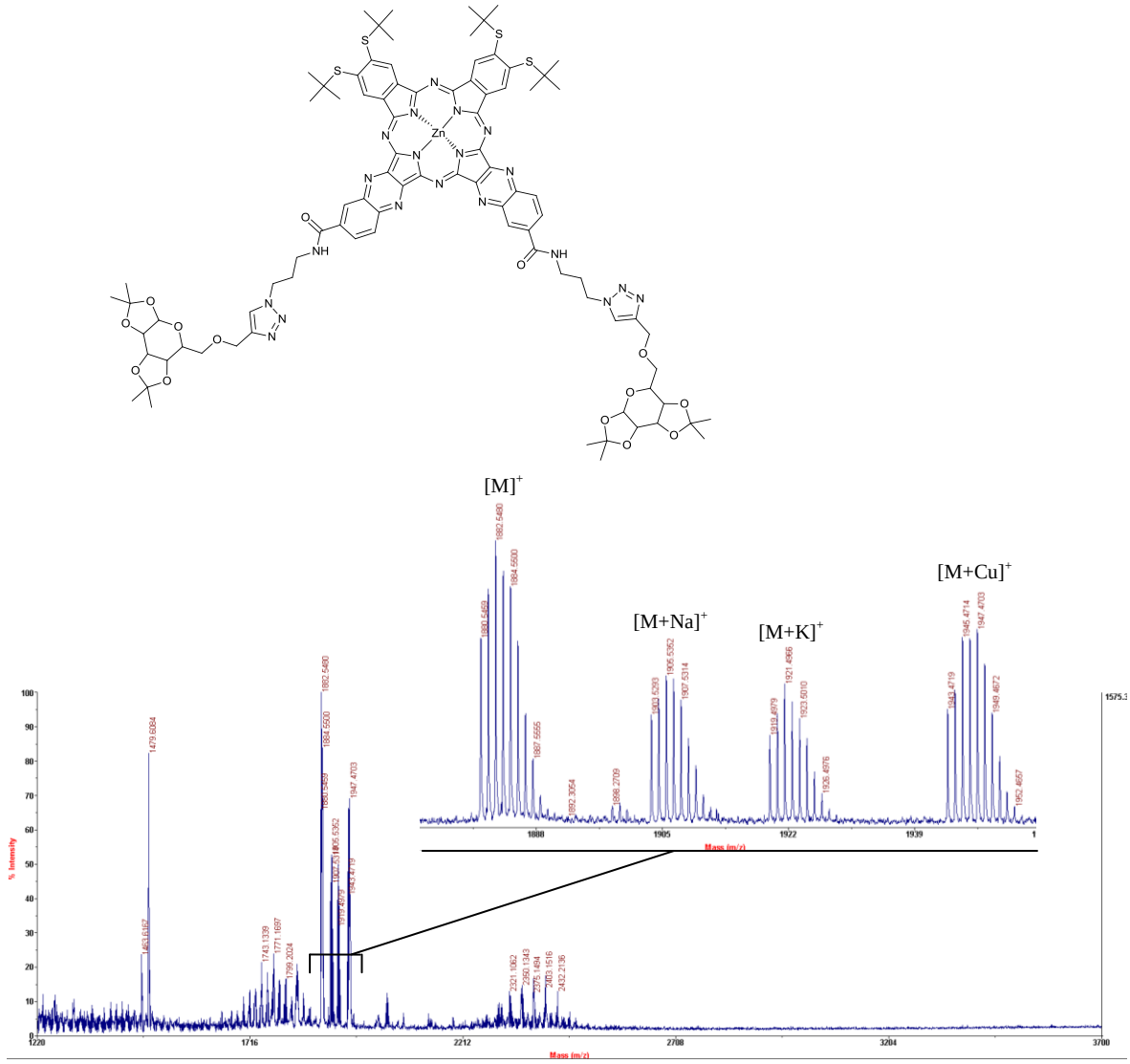
Mass spectra of compounds 6-8



Compound **6**



Compound **7**

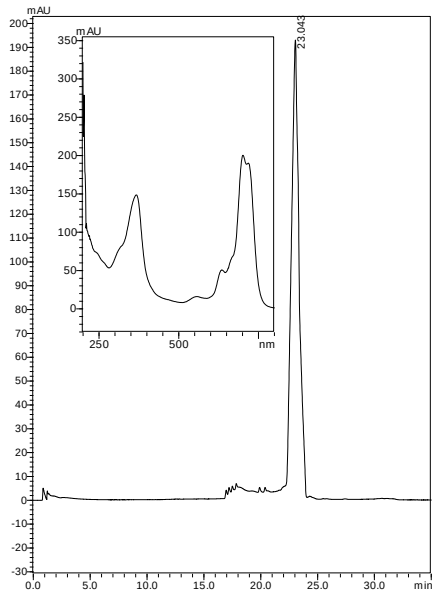


Compound **8**

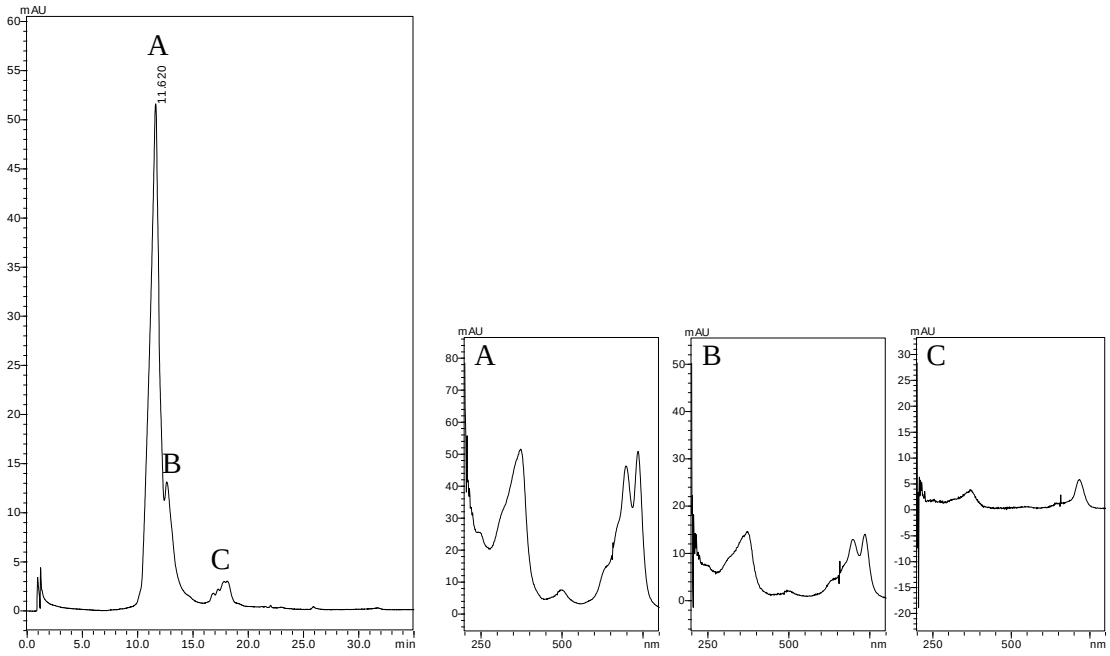
HPLC traces of compounds 6-10 and 18-19

For all figures: Absorption spectrum at the top of the peak is depicted as inset. Three-point peak purity is mentioned at each compound below in brackets. See Experimental section in the manuscript for chromatographic conditions.

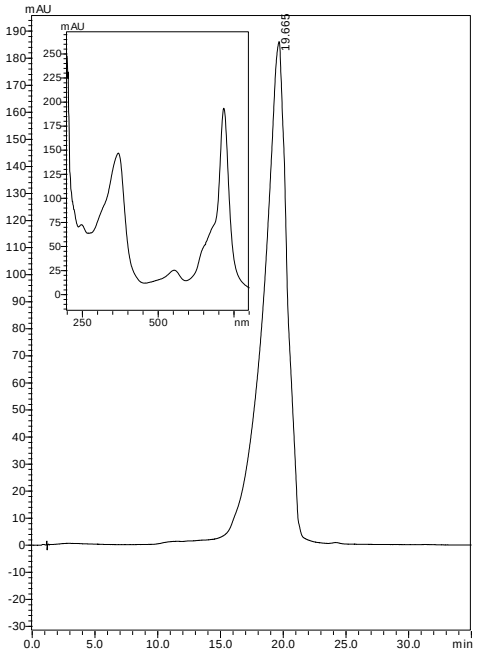
The chromatograms were monitored at the wavelengths corresponding to the absorption maximum of each compound (710 nm for **6**, **9**, **10**; 720 nm for **8**, **9**; 650 nm for **18** and 640 mn for **19**). The purity of compound **11-13** could not be studied by HPLC method due to low solubility.



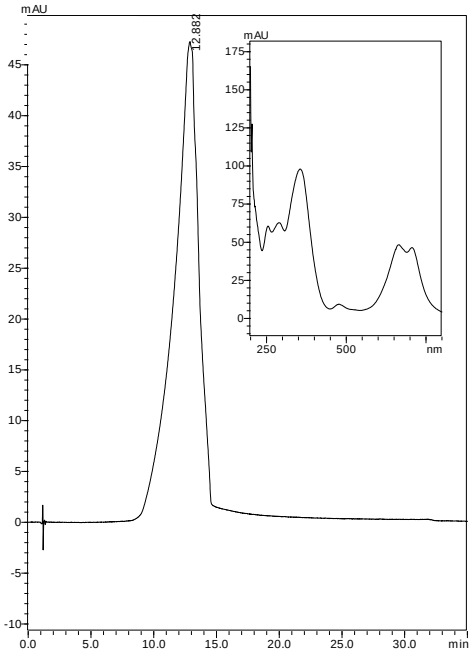
Compound **6** (0.999911)



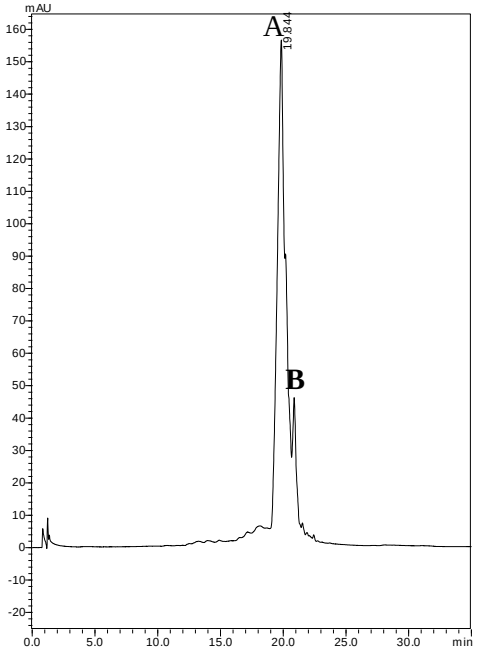
Compound **7** (0.999616). Absorption spectra taken at peaks A and B were identical and corresponded most likely to compound **7** and its copper(I) complex. The sample contained small residual amount of compound **8** (peak C).

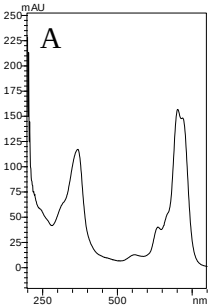


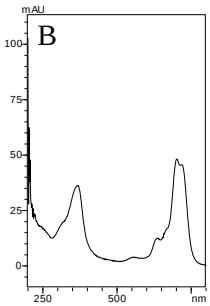
Compound **8** (0.997034)



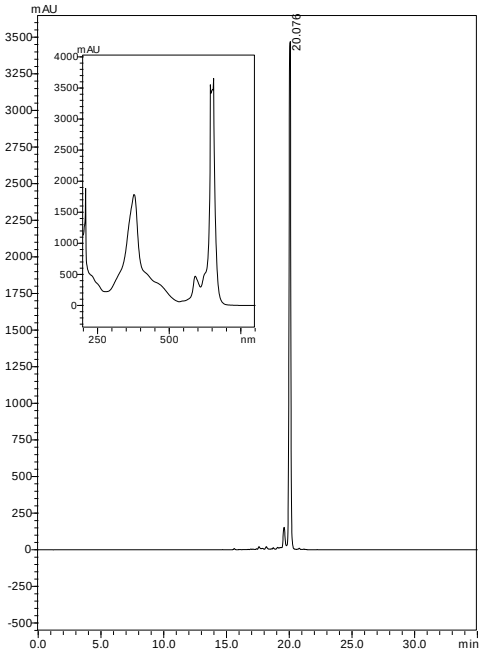
Compound **9** (0.999523)



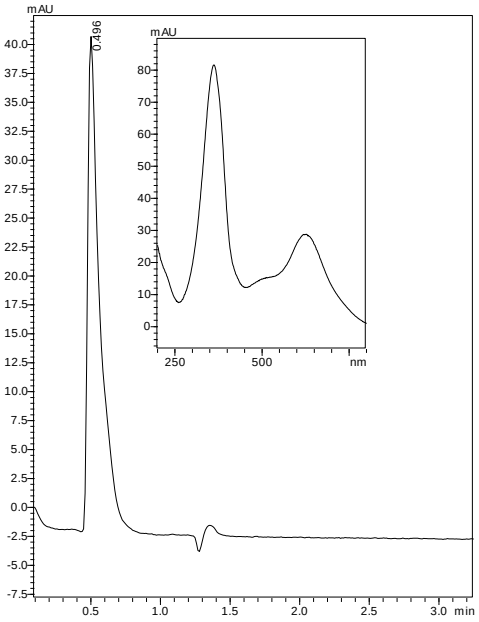




Compound **10** (0.999959). Absorption spectra taken at peaks A and B were identical and corresponded most likely to compound **10** and its copper(I) complex.



Compound **18** (0.995655)



Compound **19** (0.999272)