Supplementary material for

Carotenoid glycoside isolated and identified from cyanobacterium *Cylindrospermopsis raciborskii*

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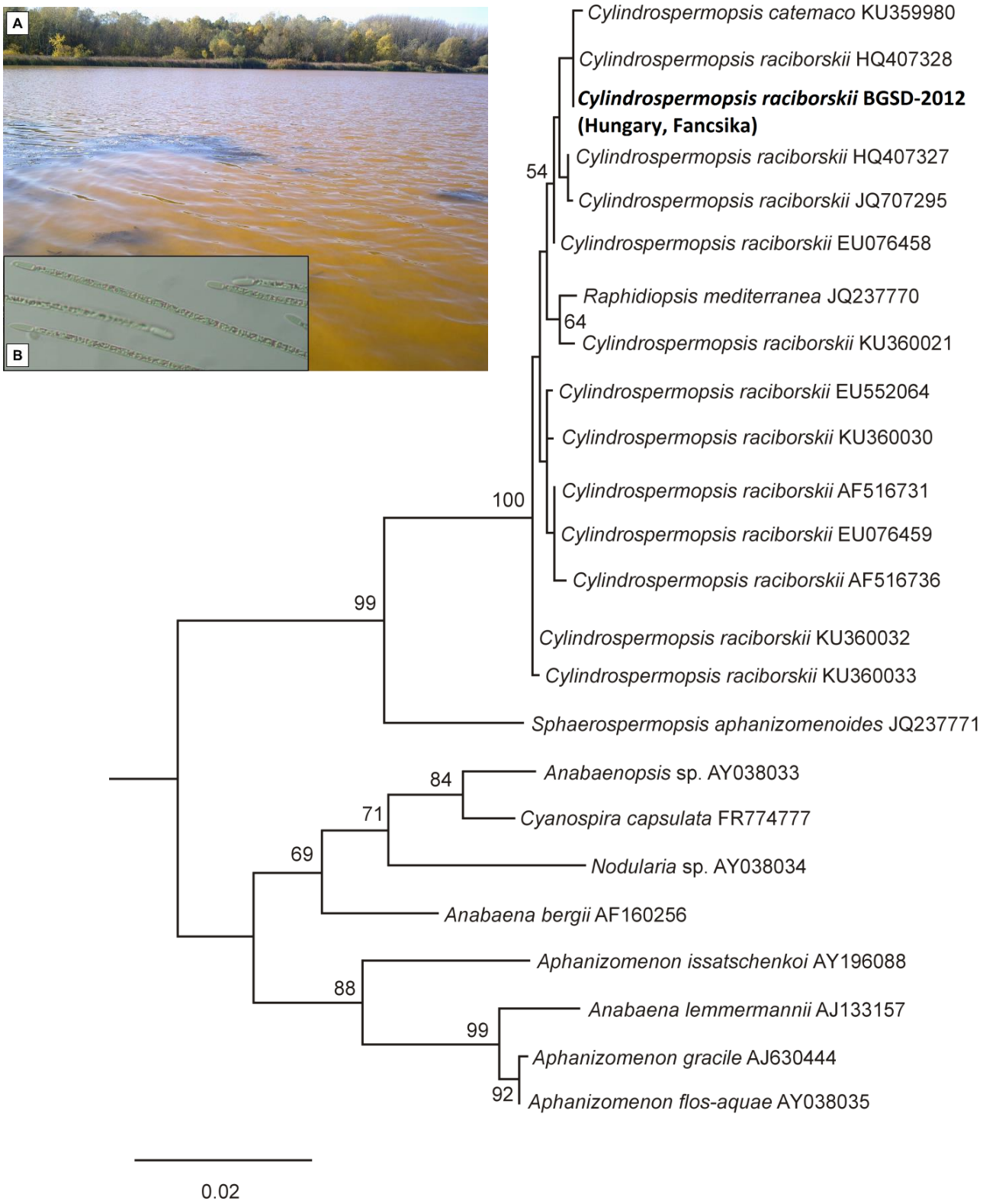
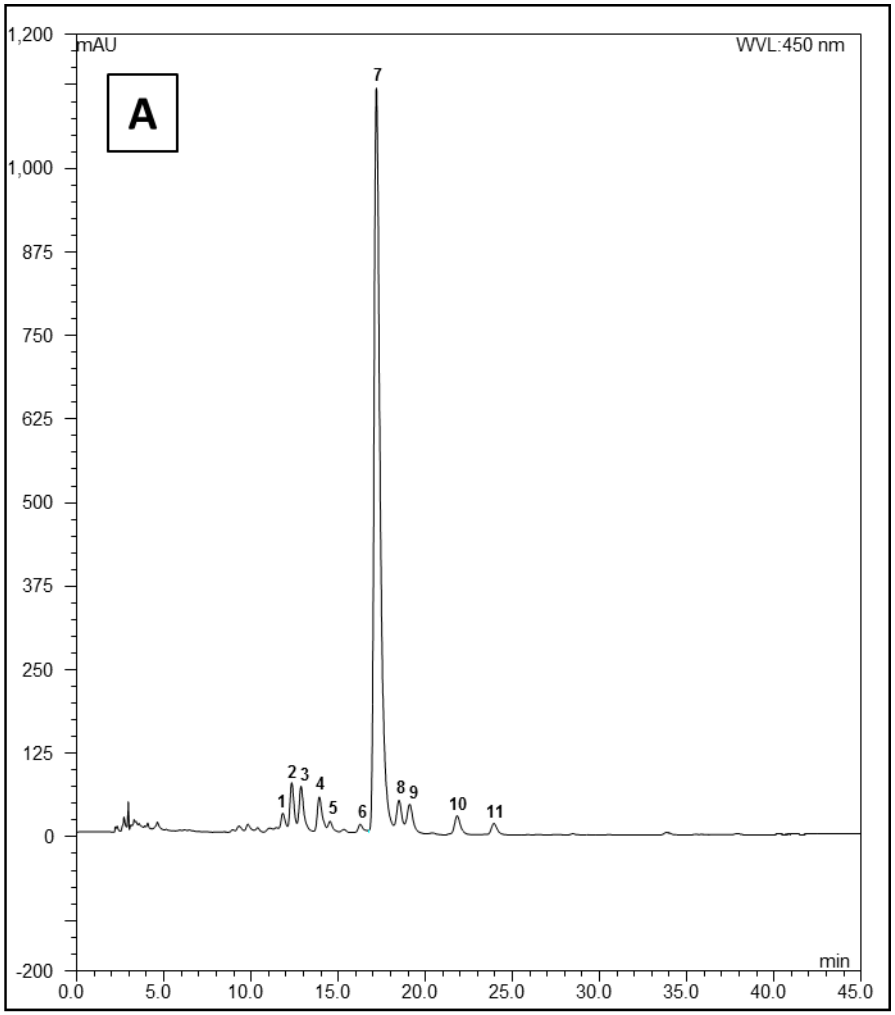


Fig. S1. Maximum likelihood tree determined on the basis of partial 16S rRNA gene sequences of 24 Nostocales strains. Outgroup = Gloeobacter violaceaus (AF132790) (not shown). Strains from this study are marked in bold. Bootstrap values above 50 are included. The scale bar indicates 2% sequence divergence. Inset shows (**A**): Discoloration of the water turning orange caused by cyano-bacterial blooming (323104 filaments/mL) (**B**). The bloom-forming species identified as *C. raciborskii* by16S rRNA gene sequences and its characteristic morphological feature (terminal heterocyst).



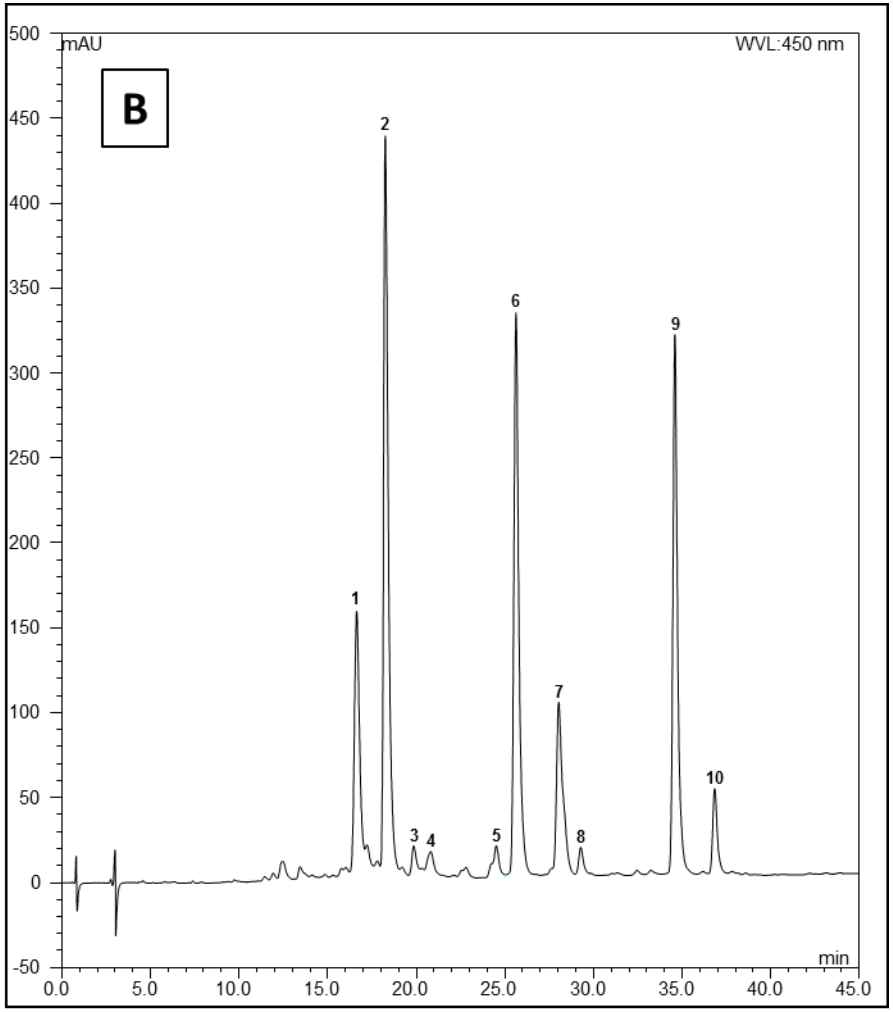


Figure S2. HPLC chromatograms of the partitionned extract: hypophase (**A**), and epiphase (**B**).
(A): peak 7: major carotenoid glycoside (78.1 % purity)
(B): peaks 1,2: chlorophyls, peak 5: β-cryptoxanthin, peak 6: echinenone, peak 7: (9/9'*Z*)-echinenone, peak 9: β-carotene, peak 10: (9*Z*)-β-carotene

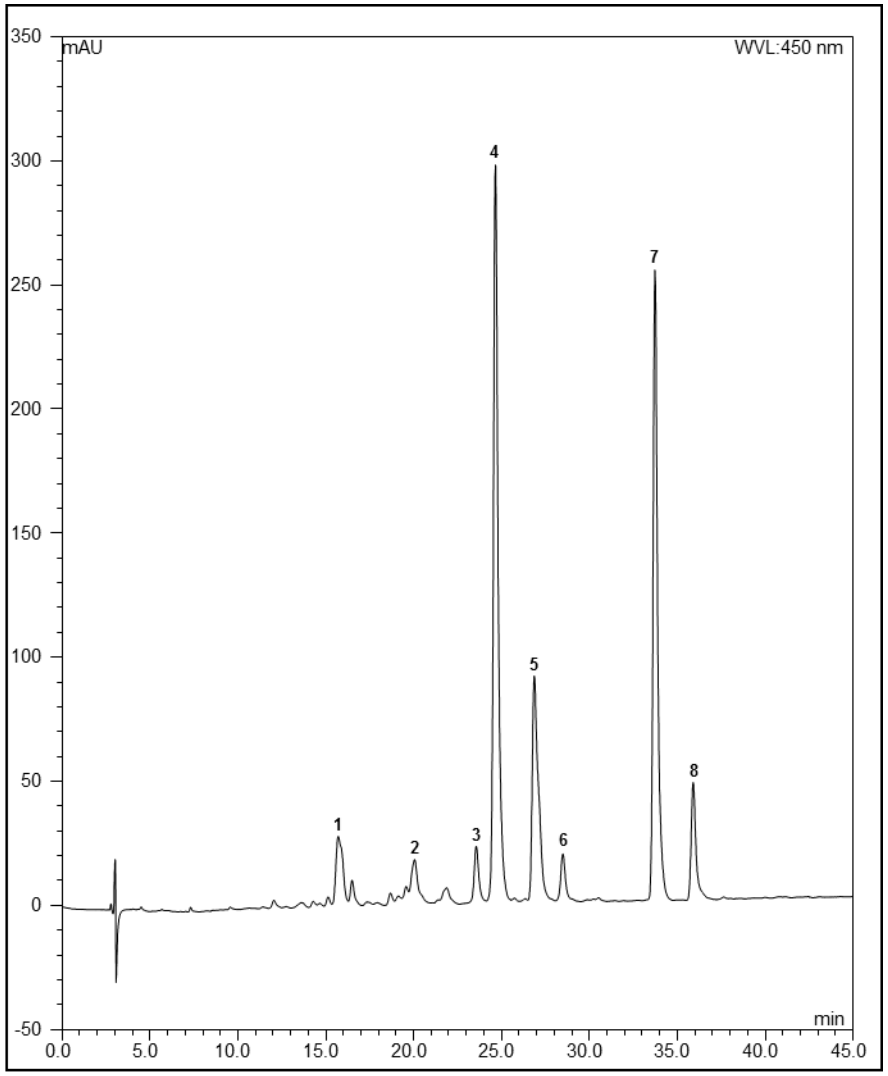


Figure S3. HPLC chromatogram of the saponified epiphase.
peak 3: β-cryptoxanthin, peak 4: echinenone, peak 5: (9/9'*Z*)-echinenone, peak 7: β-carotene, (9*Z*)-β-carotene

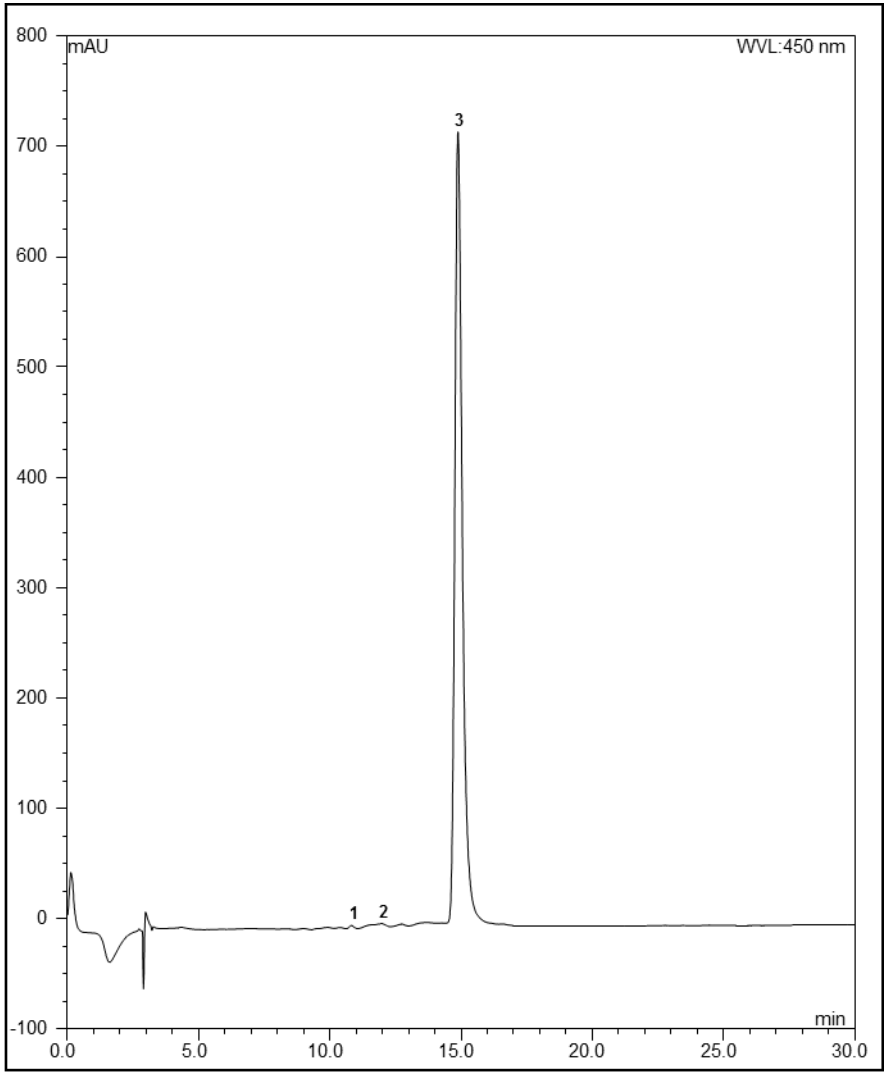


Figure S4. HPLC chromatogram of the crystalline glycoside (peak 3, 99.9% purity) gained by OCC chromatography of the hypophase.

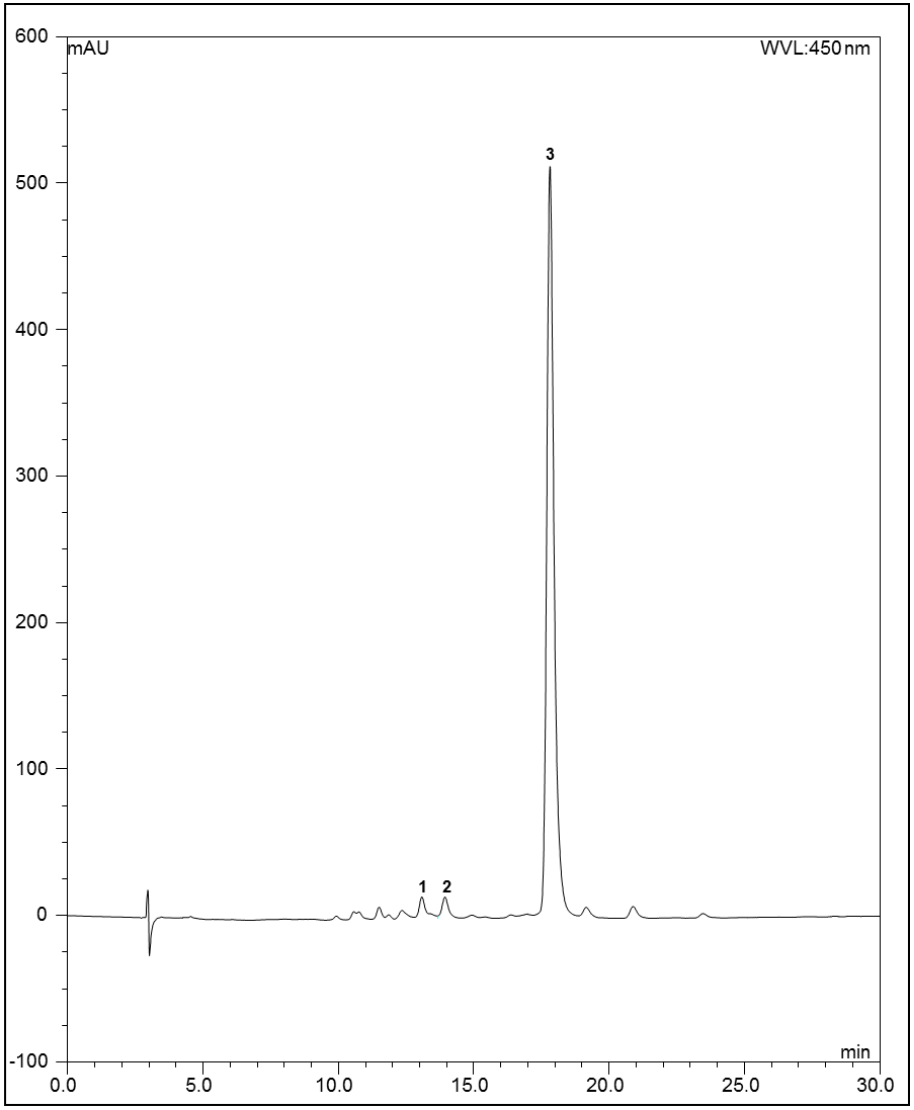


Figure S5. HPLC chromatogram of the crystalline acetylated glycoside (peak 3, 95.2% purity).

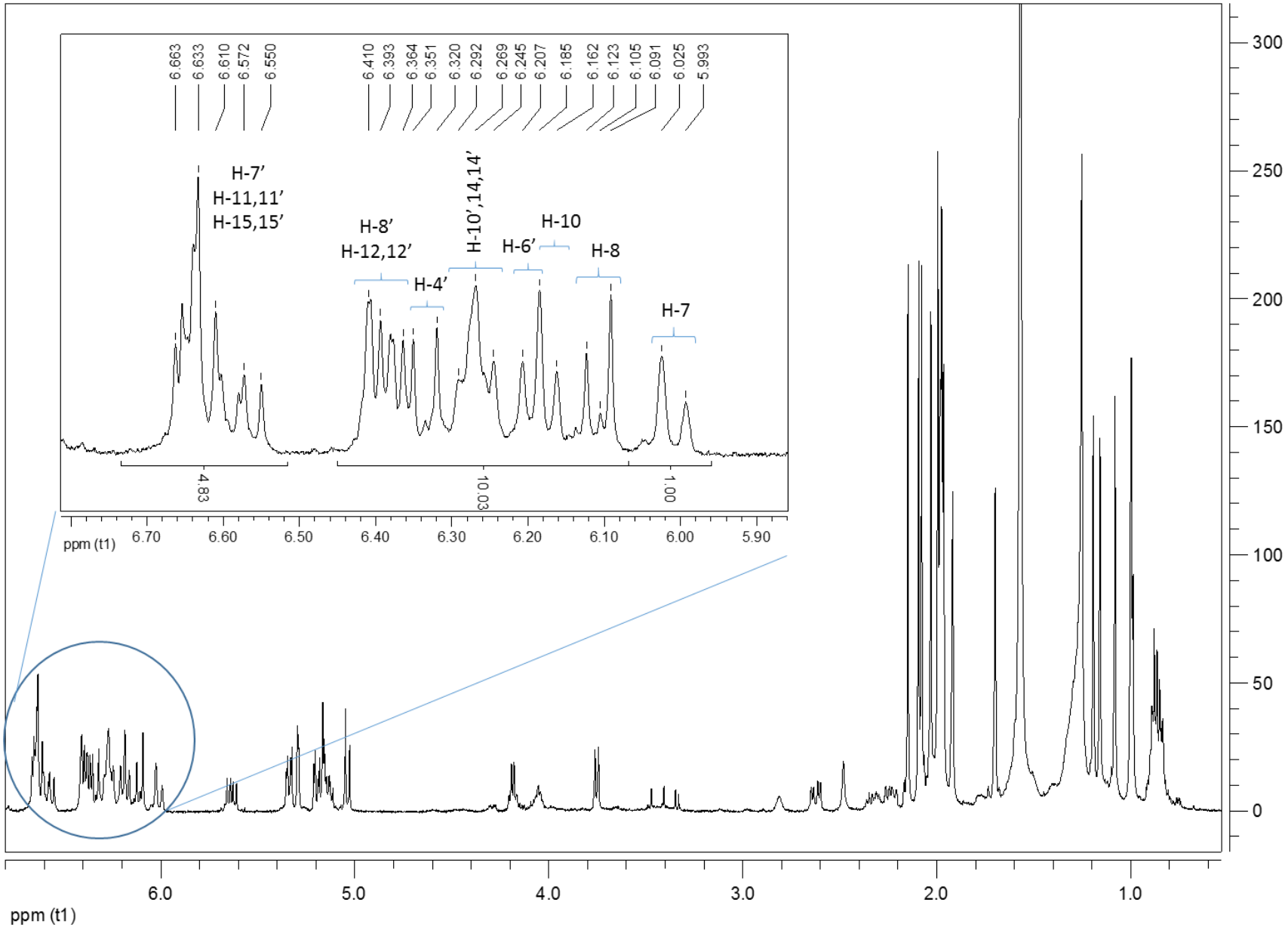


Figure S6.a. ^{1}H NMR spectrum of the acetylated glycoside in $CDCl_3$.

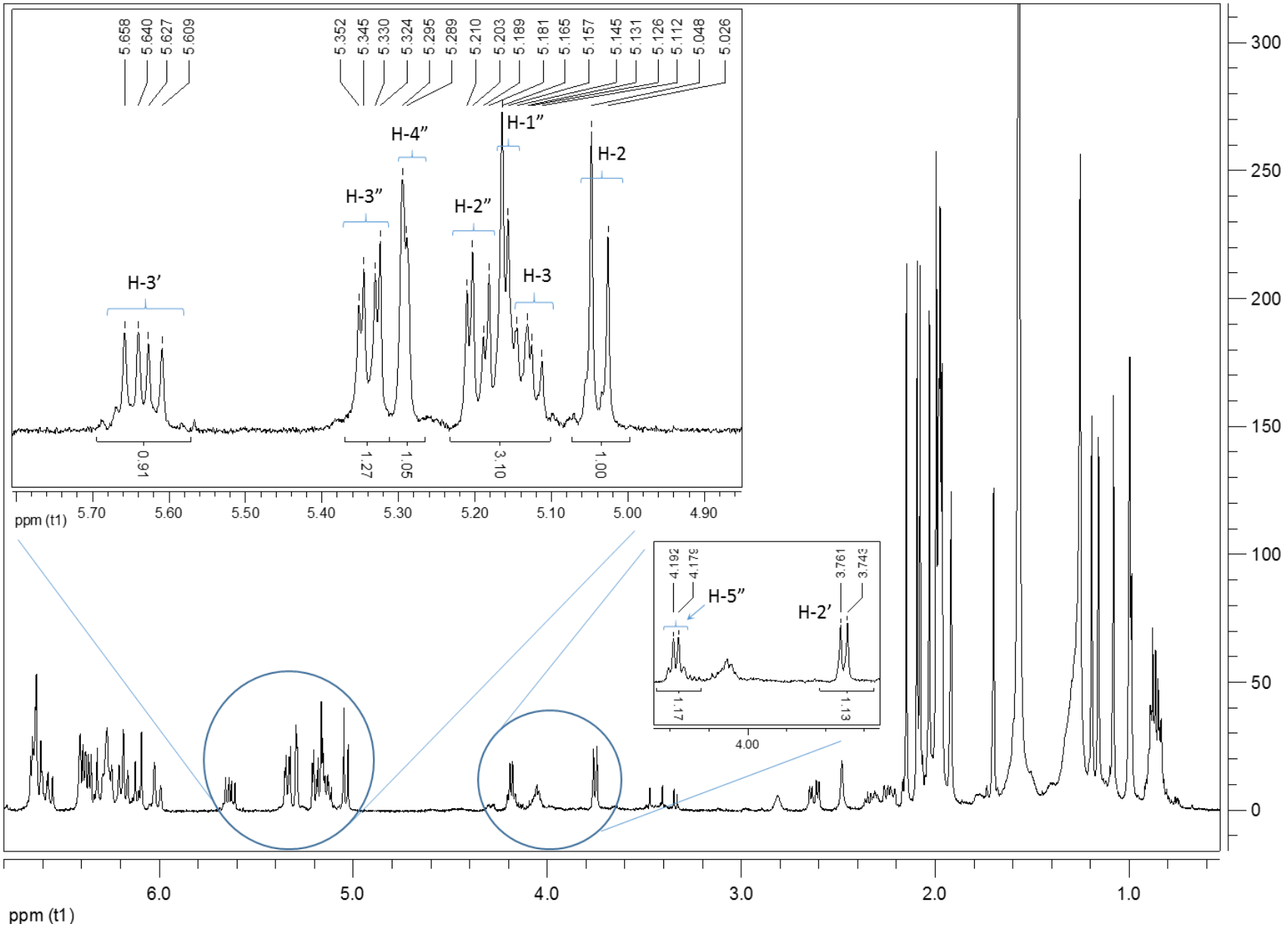


Figure S6.b. ^{1}H NMR spectrum of the acetylated glycoside in $CDCl_3$.

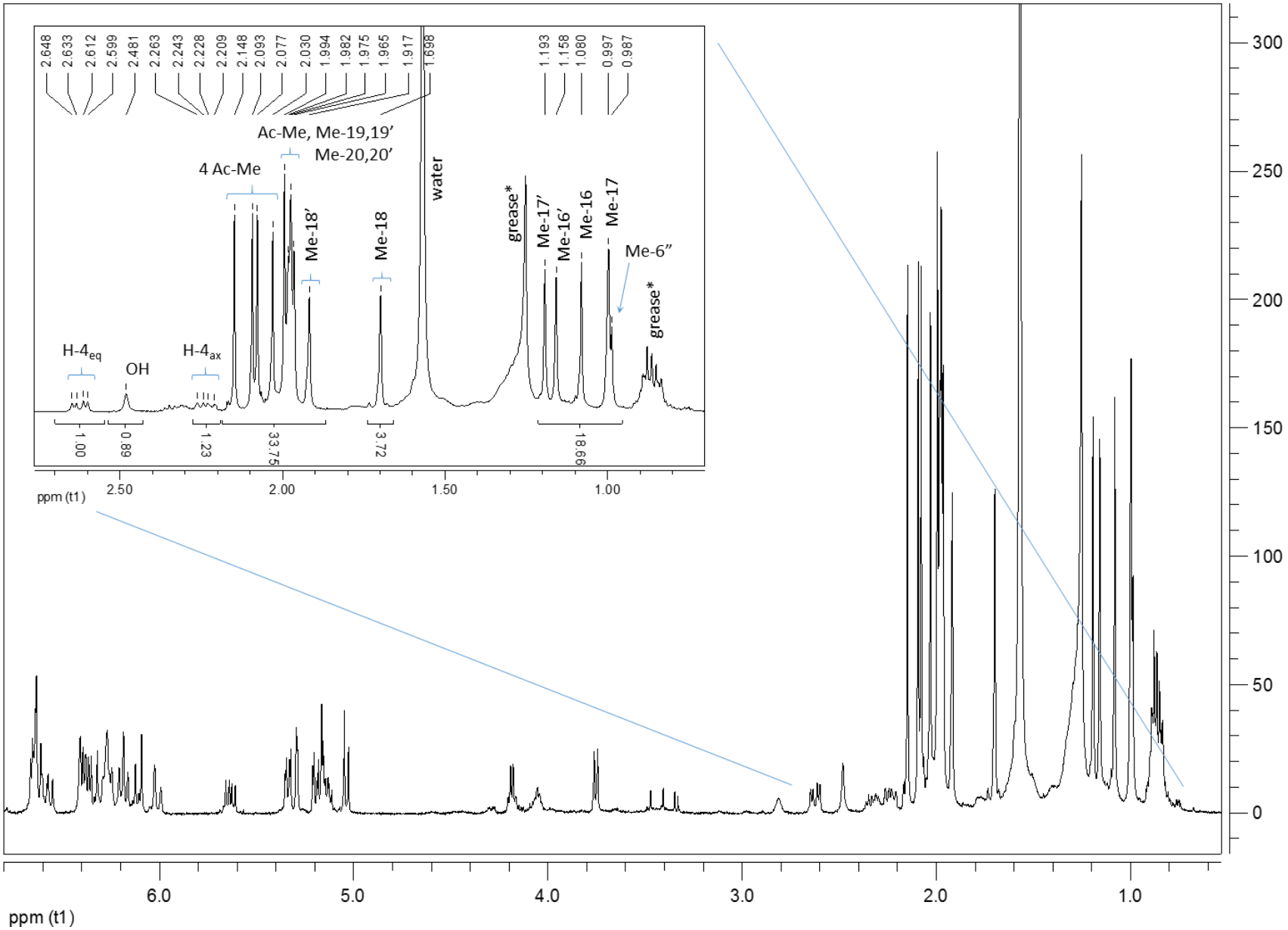


Figure S6.c. ^{1}H NMR spectrum of the acetylated glycoside in $CDCl_3$. (*grease: long chain fatty acids)

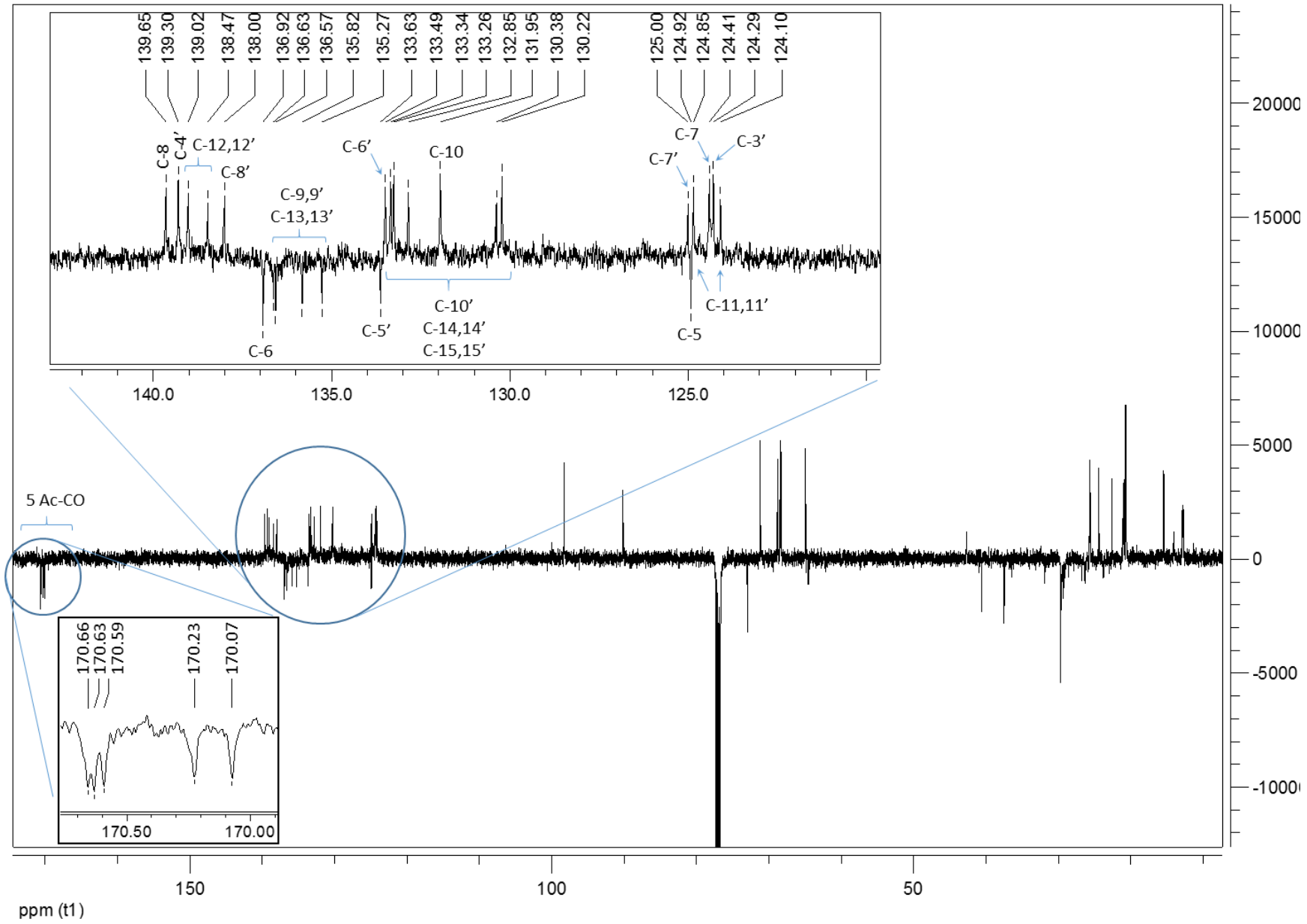


Figure S7.a. ^{13}C NMR spectrum of the acetylated glycoside in $CDCl_3$.

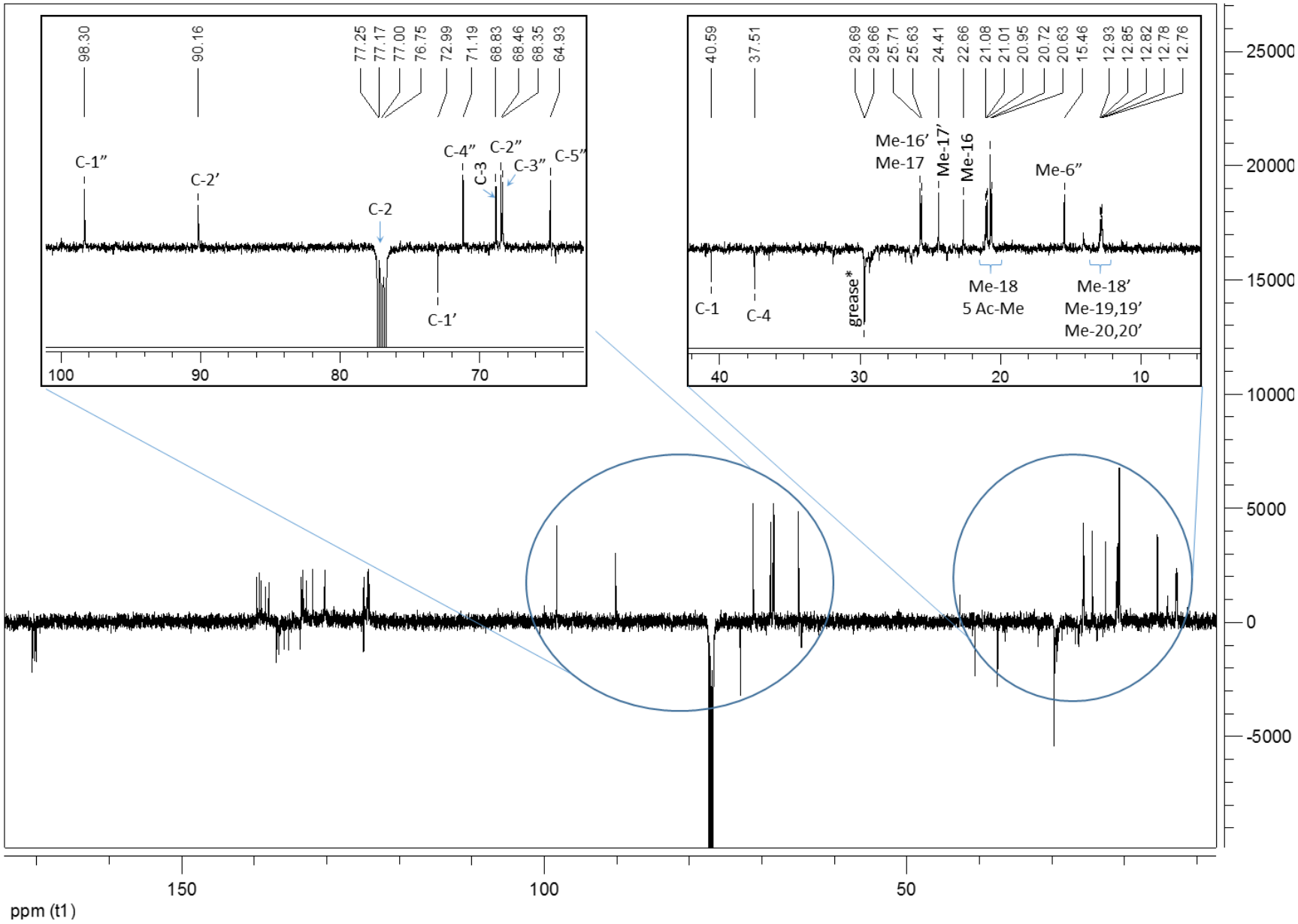


Figure S7.b. ^{13}C NMR spectrum of the acetylated glycoside in $CDCl_3$. (*grease: long chain fatty acids)

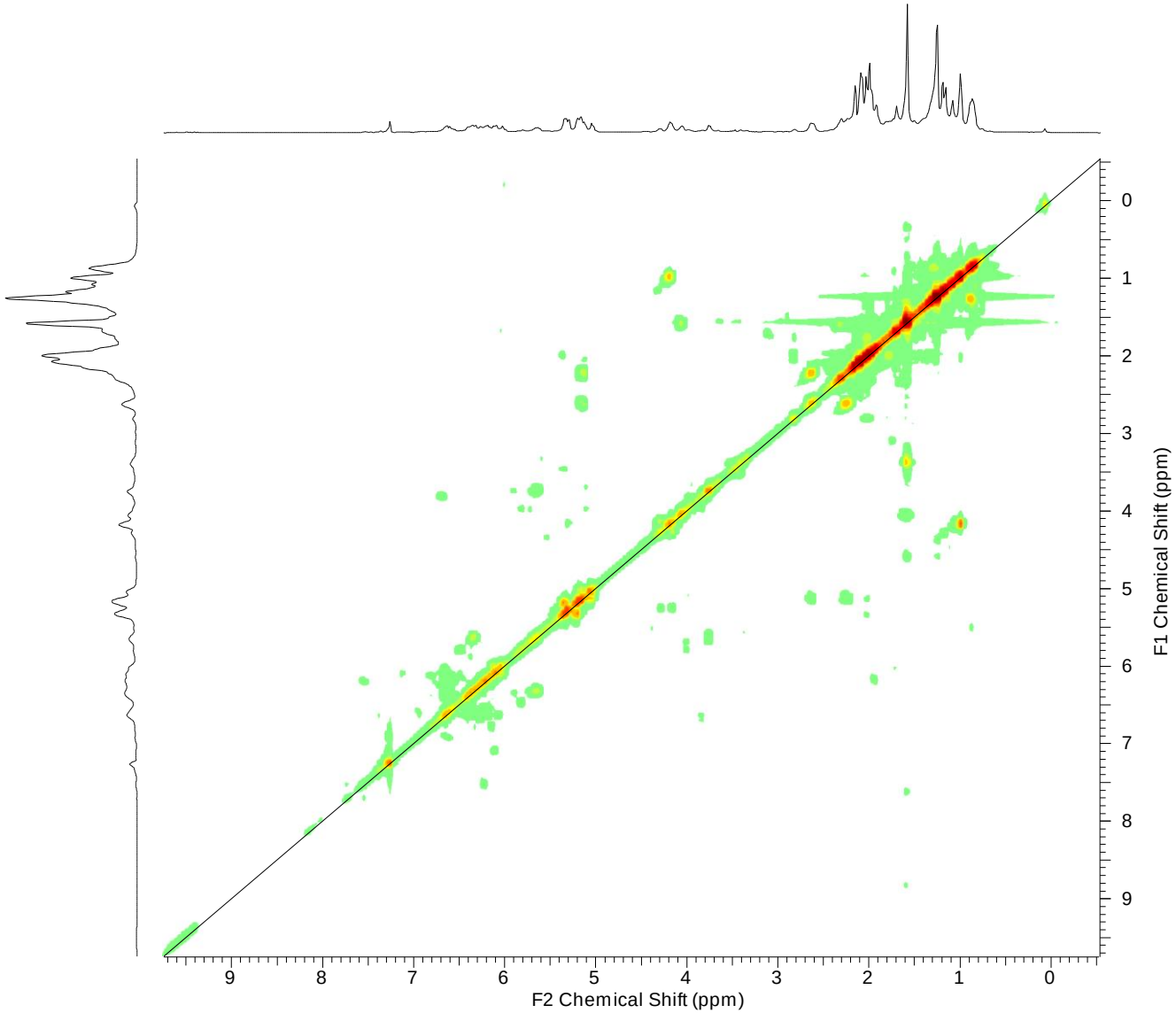


Figure S8. COSY NMR spectrum of the acetylated glycoside in $CDCl_3$.

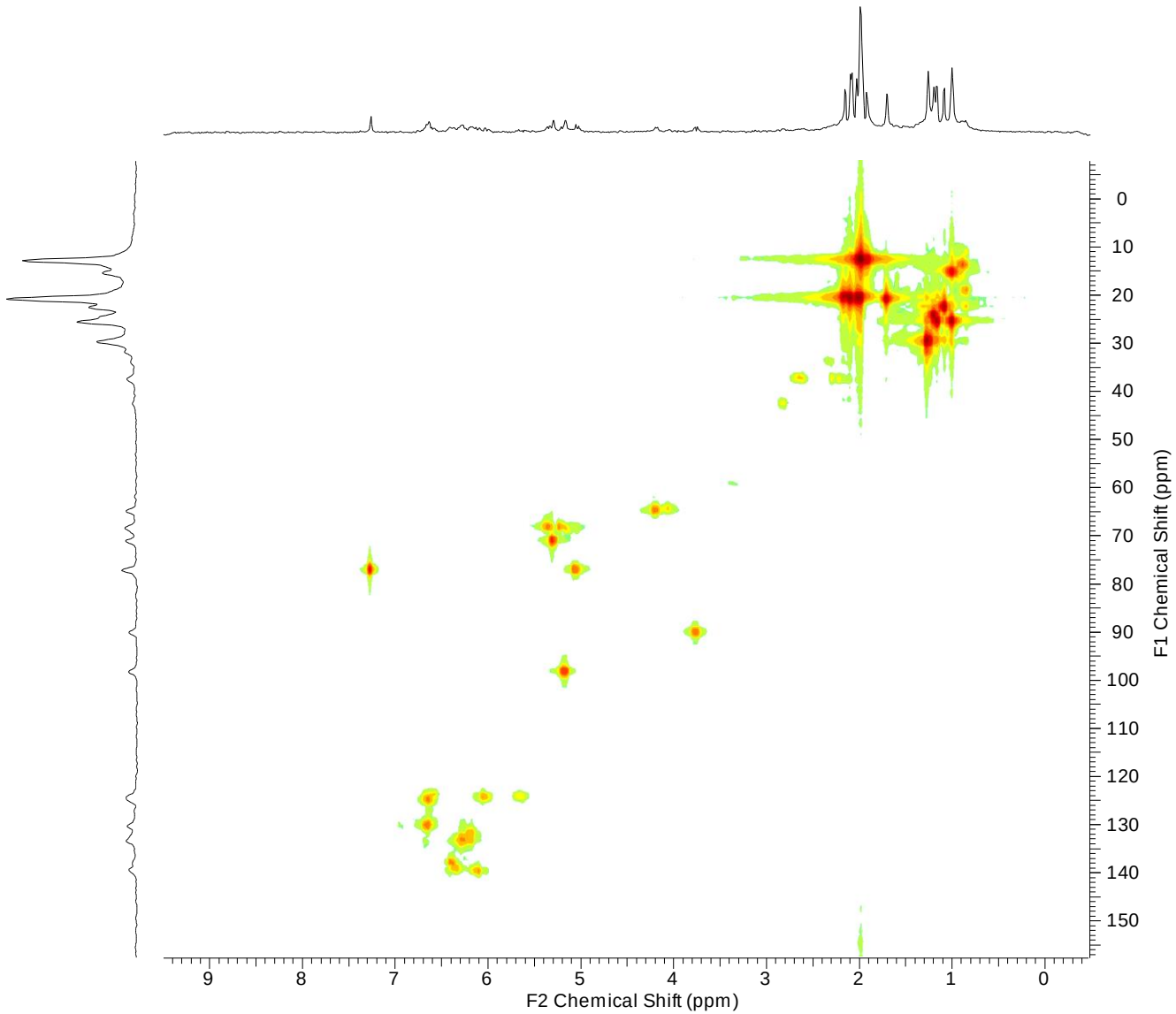


Figure S9. HSQC NMR spectrum of the acetylated glycoside in $CDCl_3$.

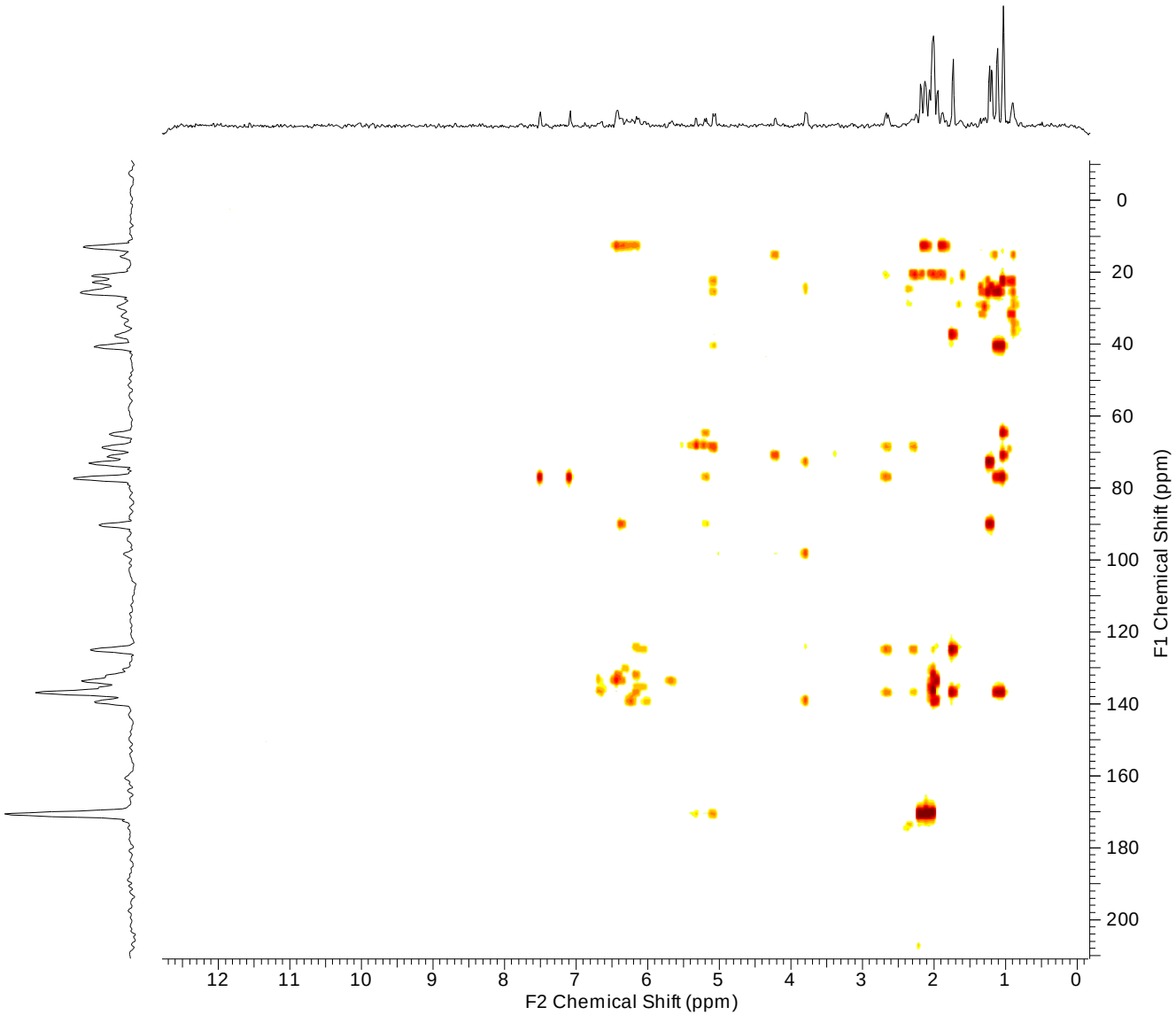
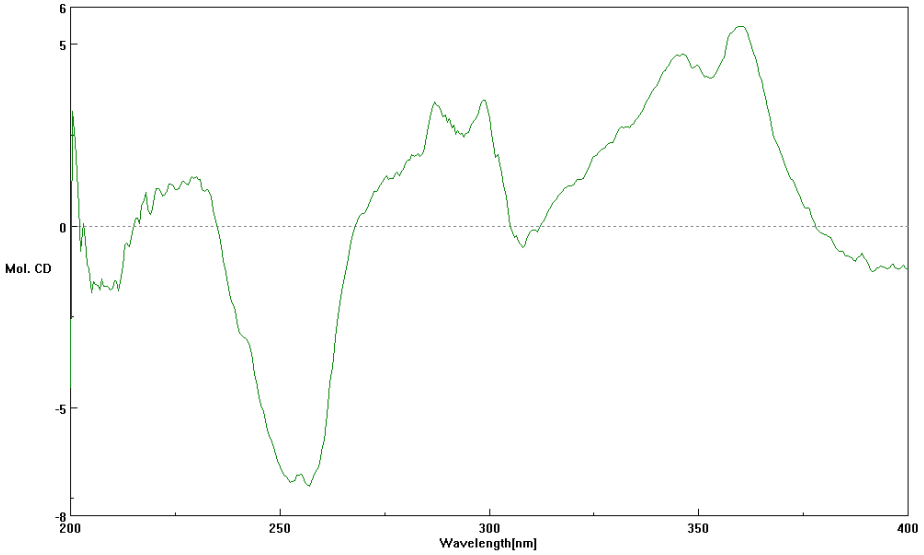
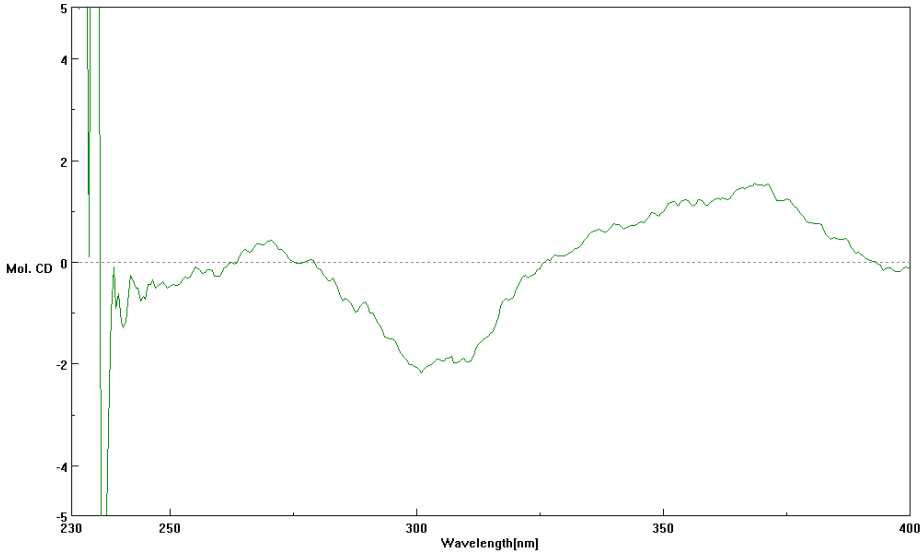


Figure S10. HMBC NMR spectrum of the acetylated glycoside in $CDCl_3$.

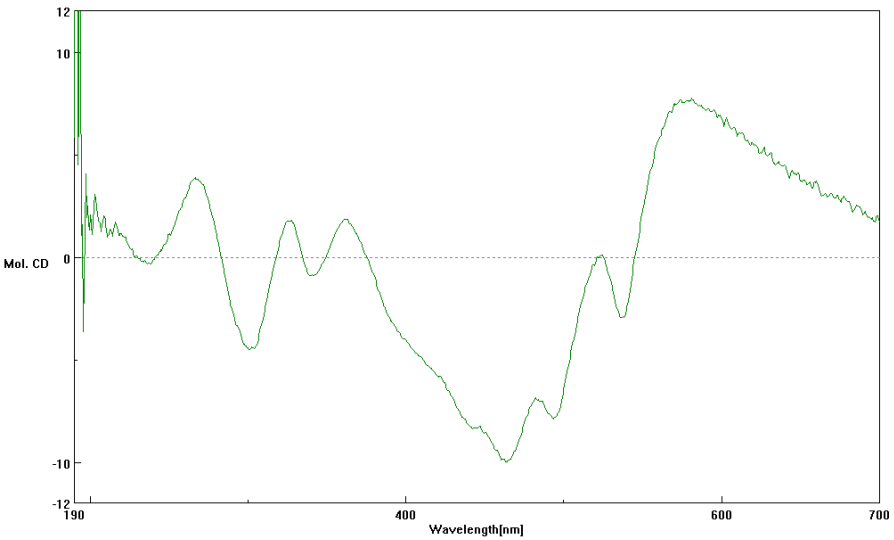
0.098 mg in 4 mL **MeOH**, c: 3.284E-5



0.098 mg 4 mL **$CHCl_3$**, c: 3,28E-5



0.098mg 4 mL **Hexan**, c: 3.28E-5



0.098 mg 4 mL **Acetonitrile**, c: 3.28E-5

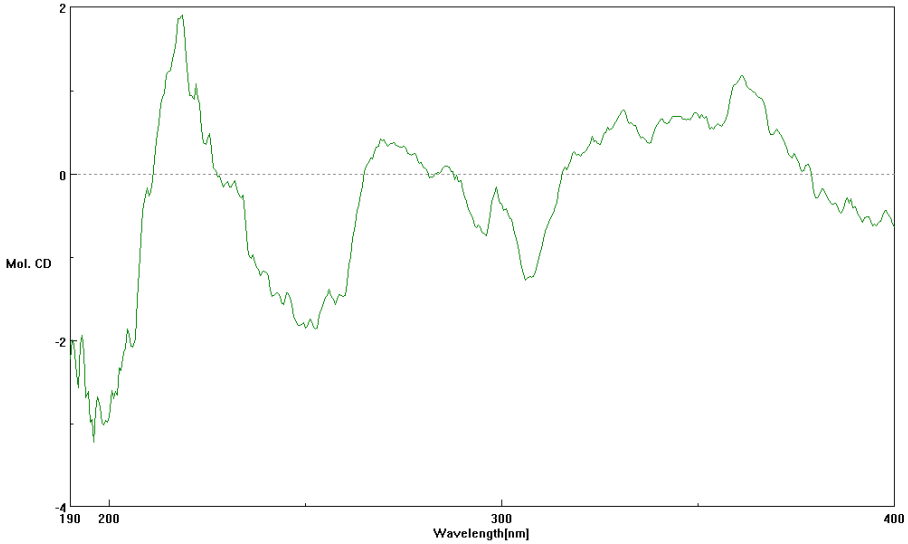


Figure S11. ECD spectrum of the acetylated glycoside in different solvents (cell width: 1 cm).

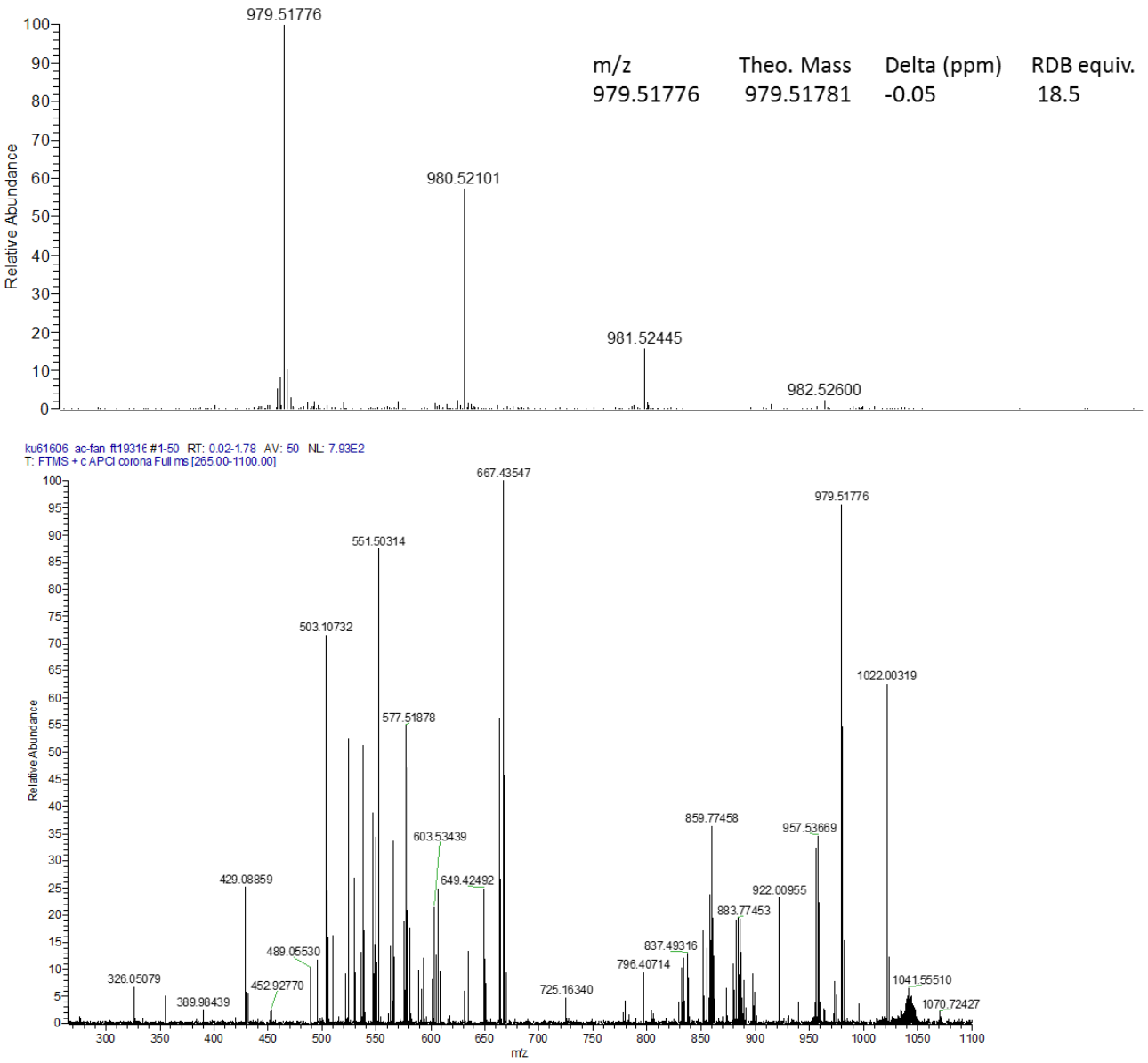
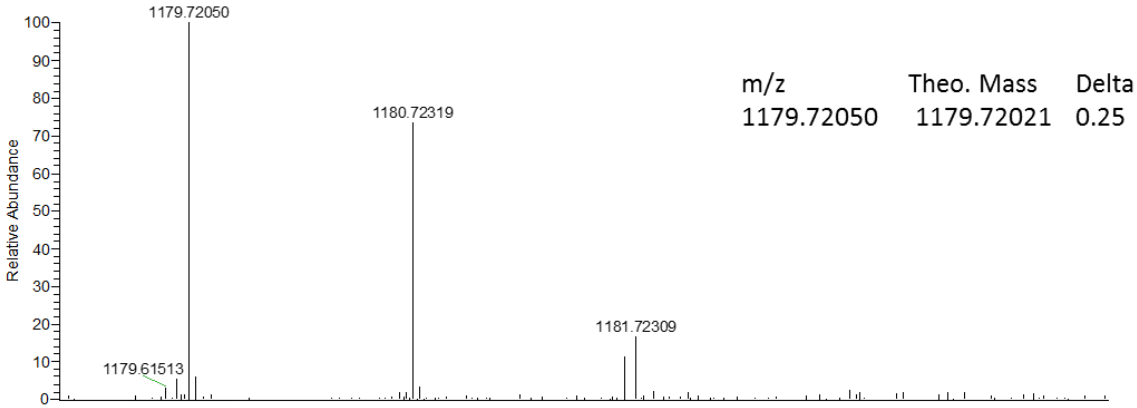


Figure S12. HRMS spectrum of the acetylated glycoside.



m/z	Theo. Mass	Delta (ppm)	RDB equiv.	Composition
1179.72050	1179.72021	0.25	13.5	$C_{64}H_{115}O_8Si_6$

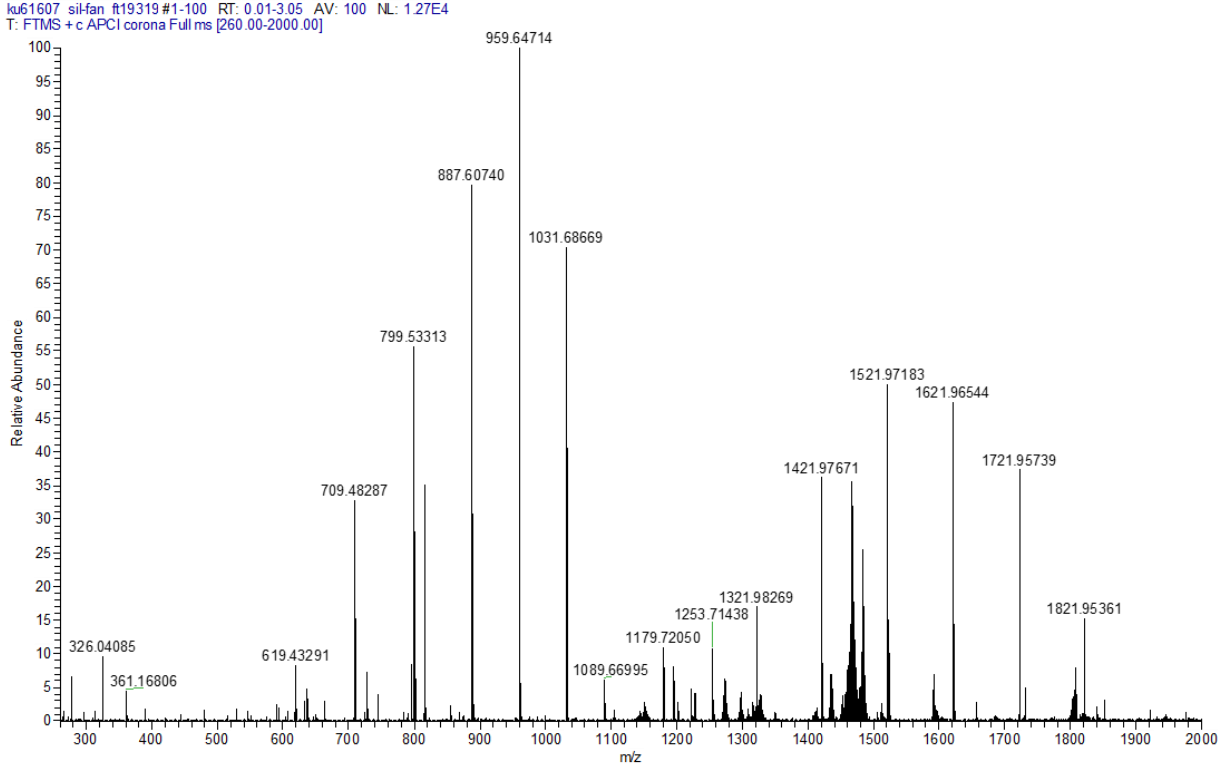


Figure S13. HRMS spectrum of the silylated glycoside.