

Identification of unknown compound

Ondřej Jurček

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Task 0: Classification of an unknown substance

Assign the general name to displayed substances:

CARBOHYDRATE

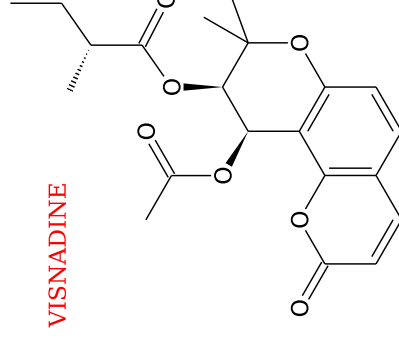
PEPTIDE

STEROID

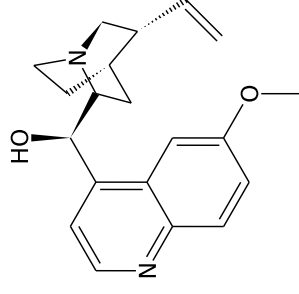
TERPENE

ALKALOID

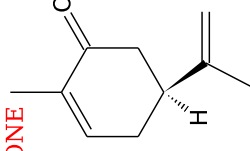
COUMARINE



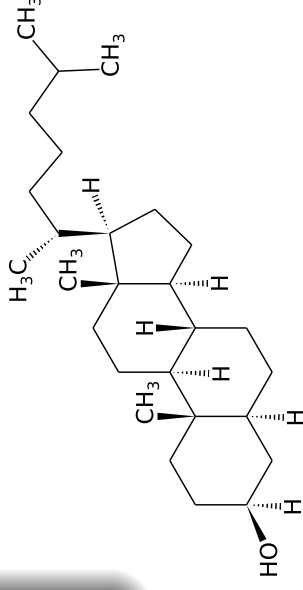
QUININE



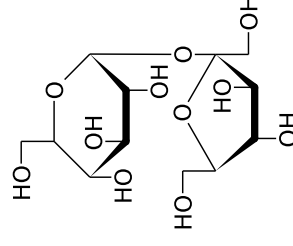
CARVONE



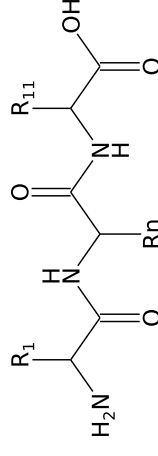
DIHYDROCHOLESTEROL



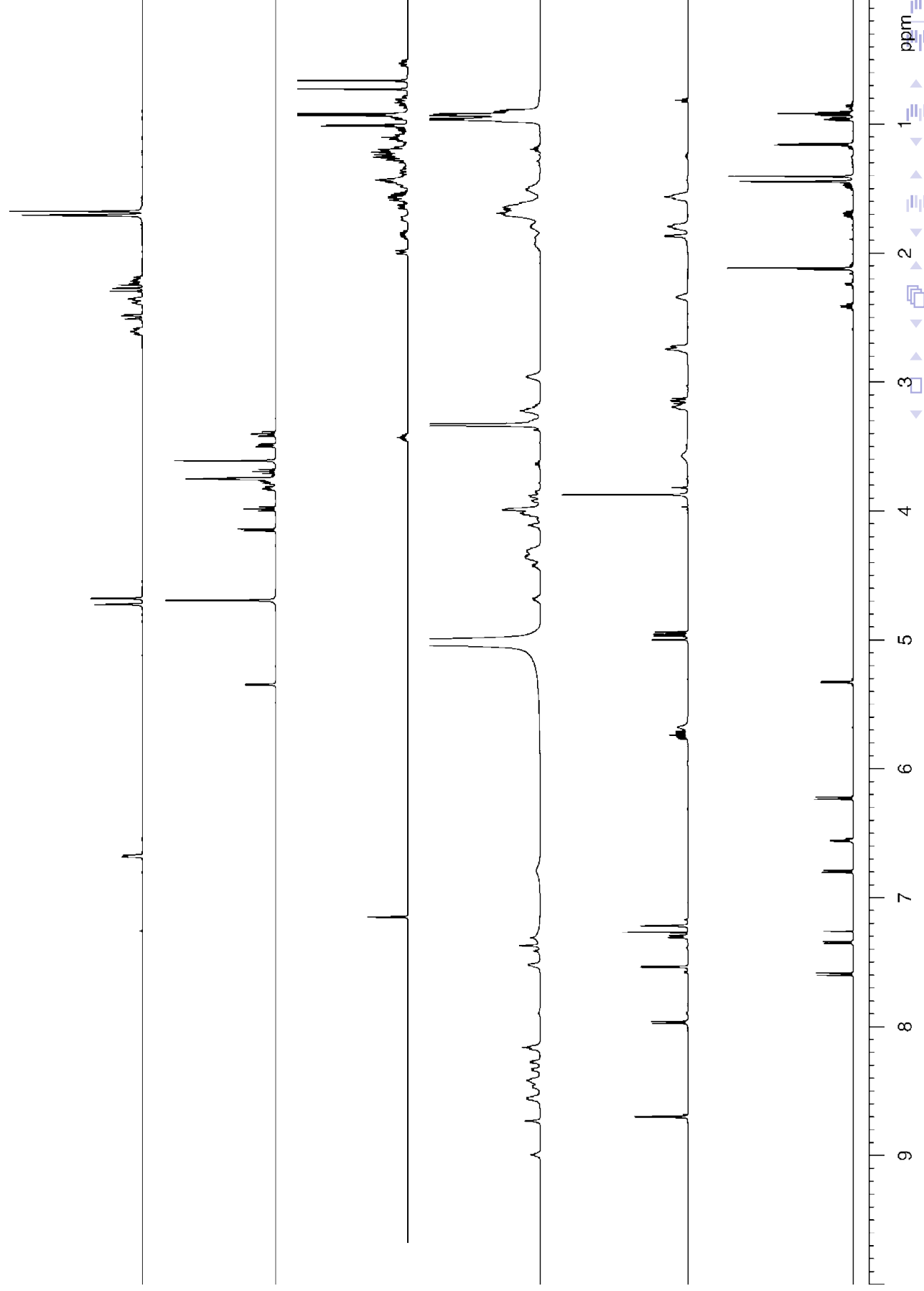
SACHAROSA



SGGLRLHLGLS



Task 0: Classification of an unknown substance



Task 1: $C_{10}H_{13}NO$

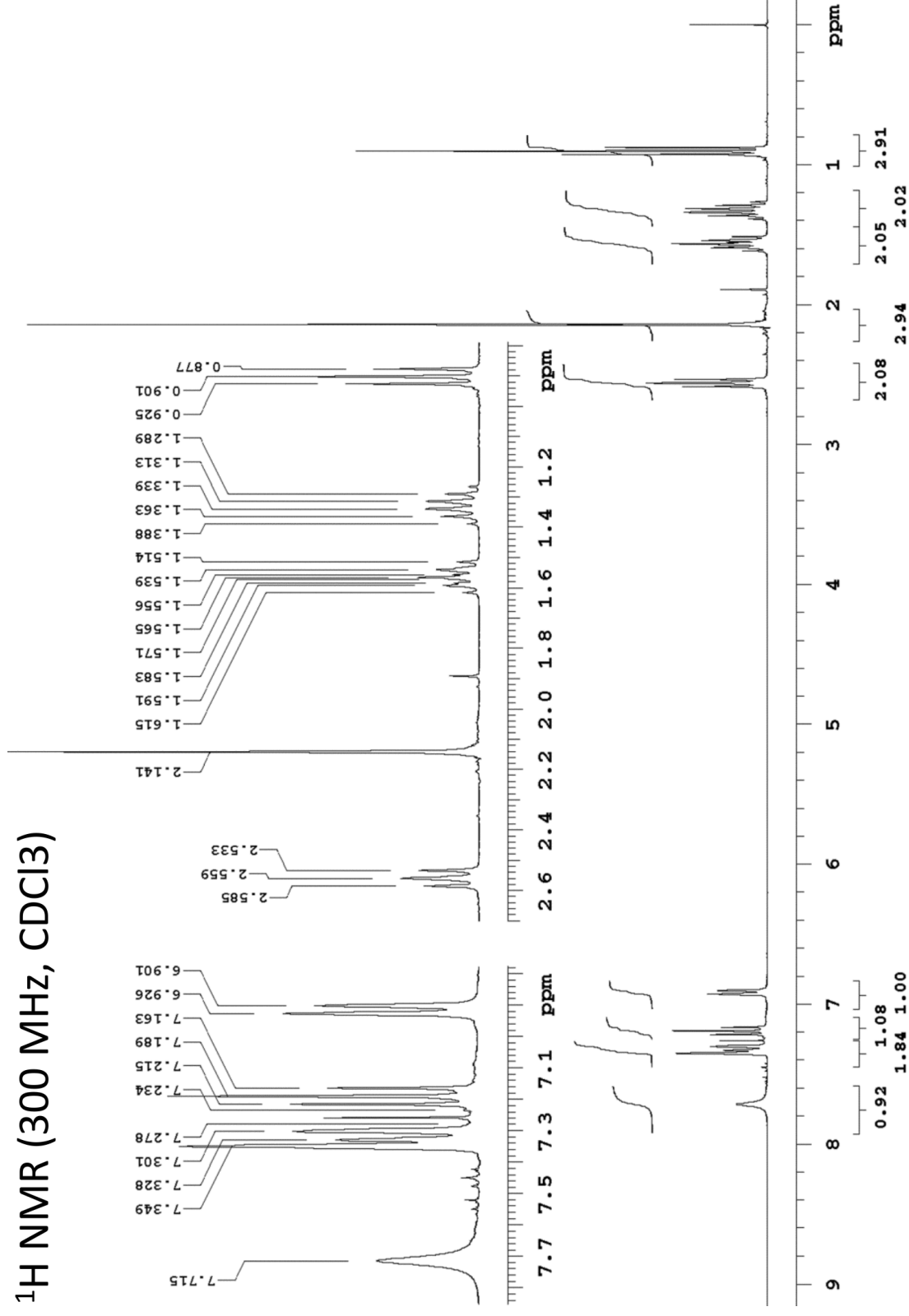
δ [ppm]	Multiplicity	Integral
1.05	triplet	3
1.75	singlet	3
3.70	quartet	2
7-7.60	complex multiplet	5

Task 2: $C_{11}H_{15}NO_2$

δ [ppm]	Multiplicity	J (Hz)	Integral
1.30	triplet	7	3
3.00	singlet	-	6
4.25	quartet	7	2
6.65	dublet	8	2
7.80	dublet	8	2

Task 3: $C_{12}H_{17}NO_2$ - $^1H/COSY$

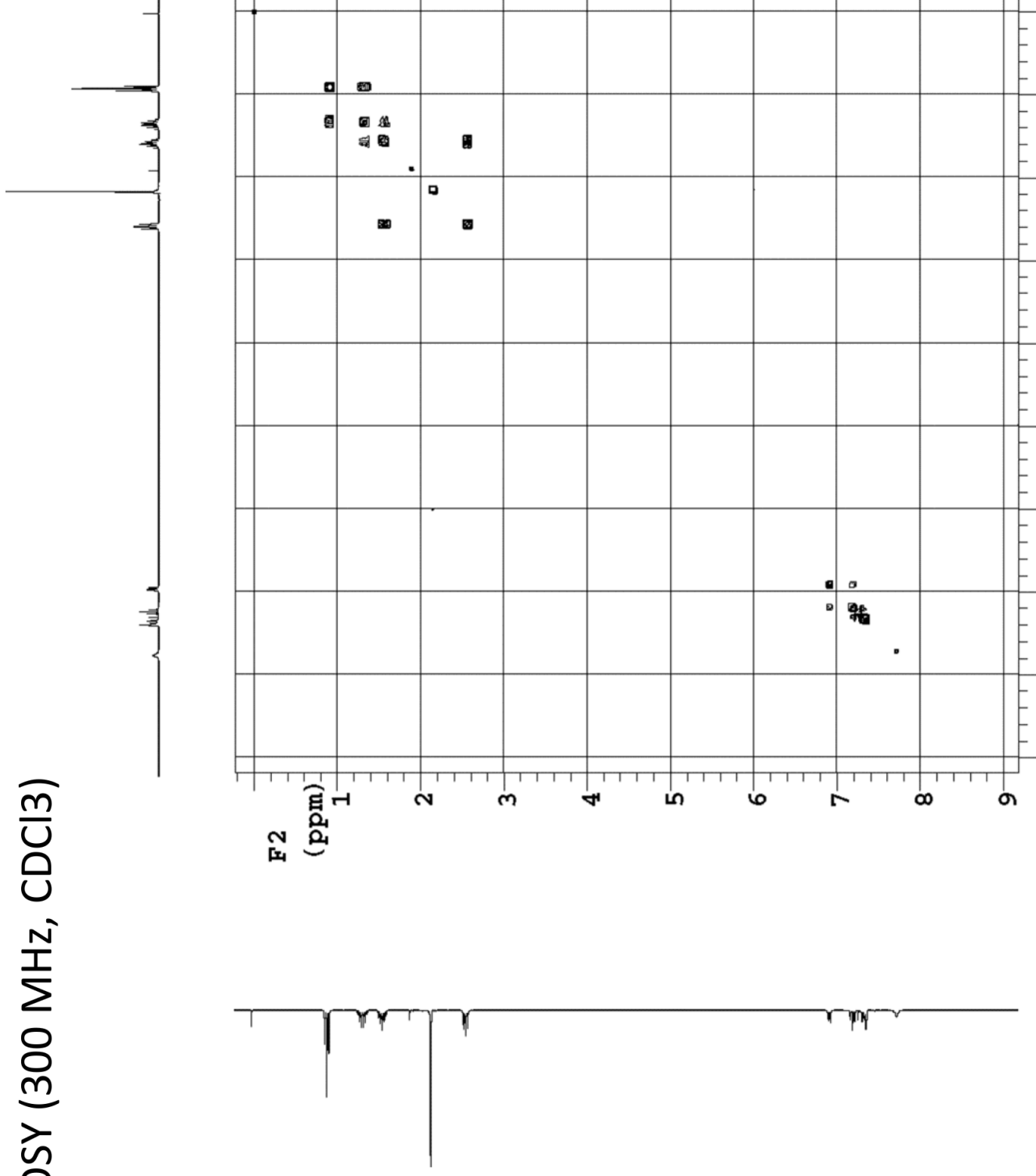
1H NMR (300 MHz, $CDCl_3$)



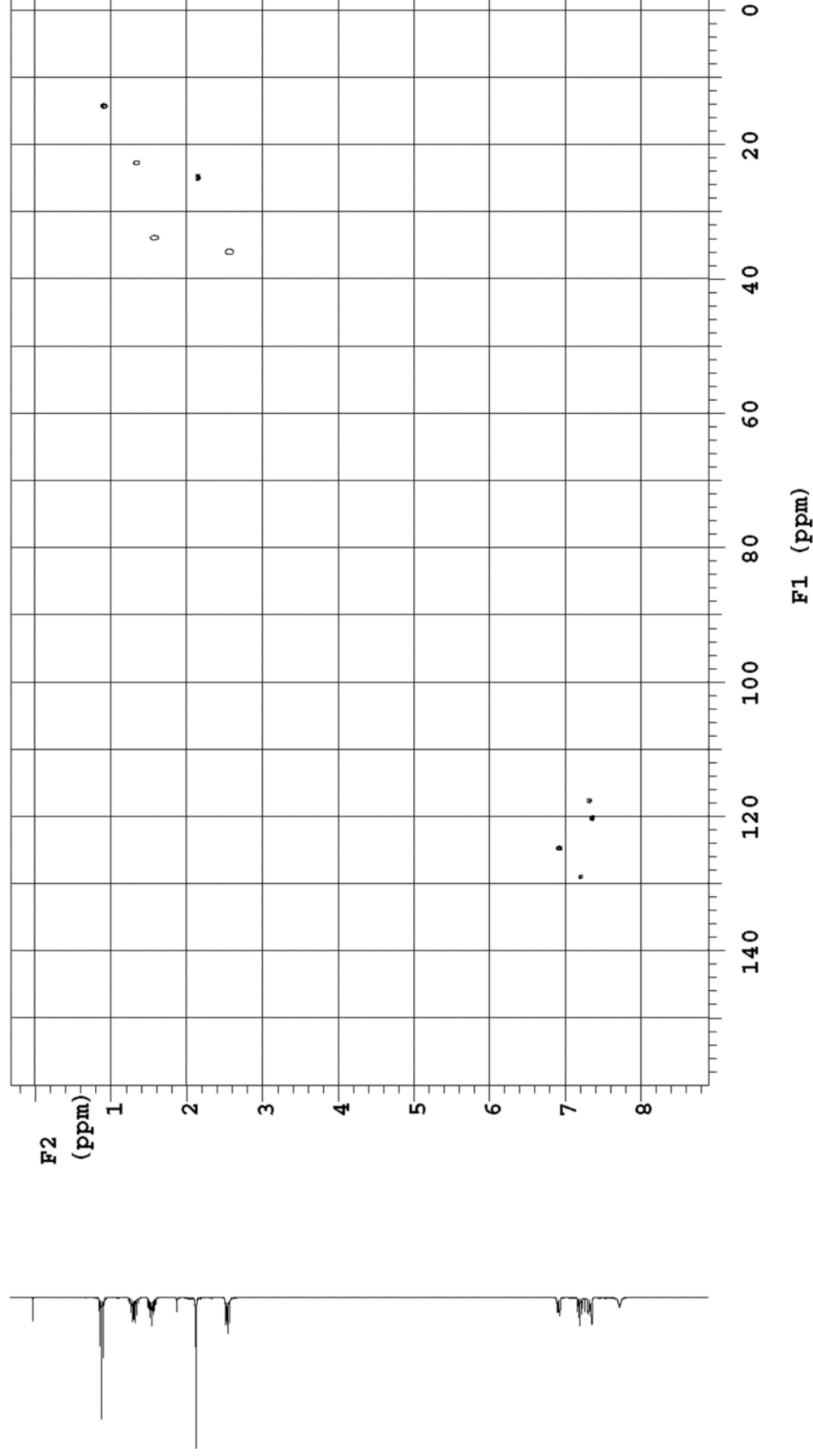
SOLUTION

Task 3: $C_{12}H_{17}NO_2$ - $^1H/COSY$

COSY (300 MHz, $CDCl_3$)

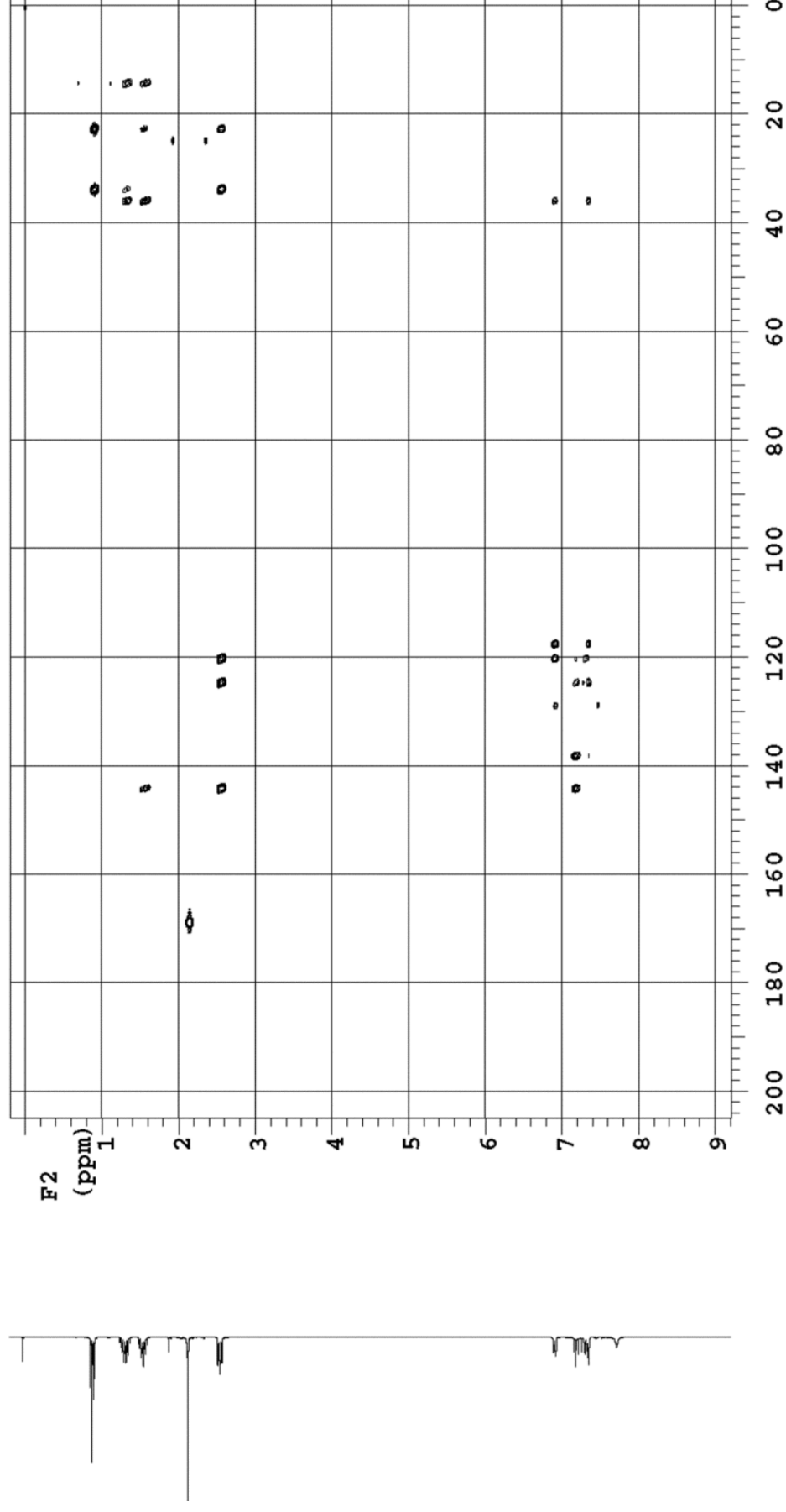


Task 3: $C_{12}H_{17}NO_2$ - ^{13}C /HSQC, HMBC



Task 3: $C_{12}H_{17}NO_2$ - $^{13}C/HSQC, HMBC$

HMBC (300 MHz, CDCl₃)



Relative stereochemistry on a ring: NOESY

Provide the full assignment of ^1H resonances and determine the orientation of H5 and H6.

