Supplementary Information 1

The data of NMR analyses of compound X

A: ^{1}H NMR (600 MHz, CD_3OD)

B: ^{13}C NMR (600 MHz, CD_3OD)

C: COSY (CD_3OD)

D: TOCSY (CD_3OD)

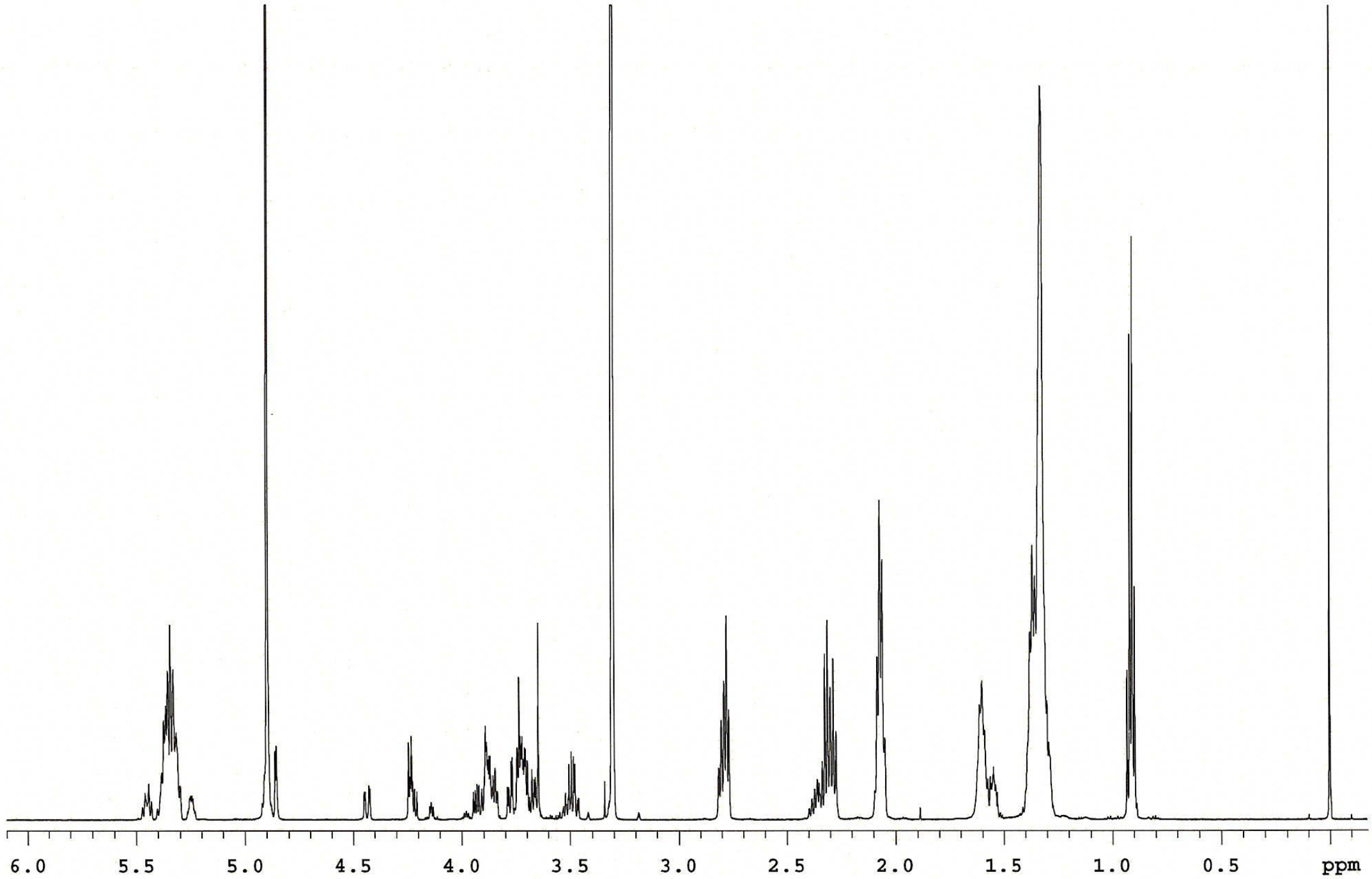
E: HSQC (CD_3OD)

F: HMBC (CD_3OD)

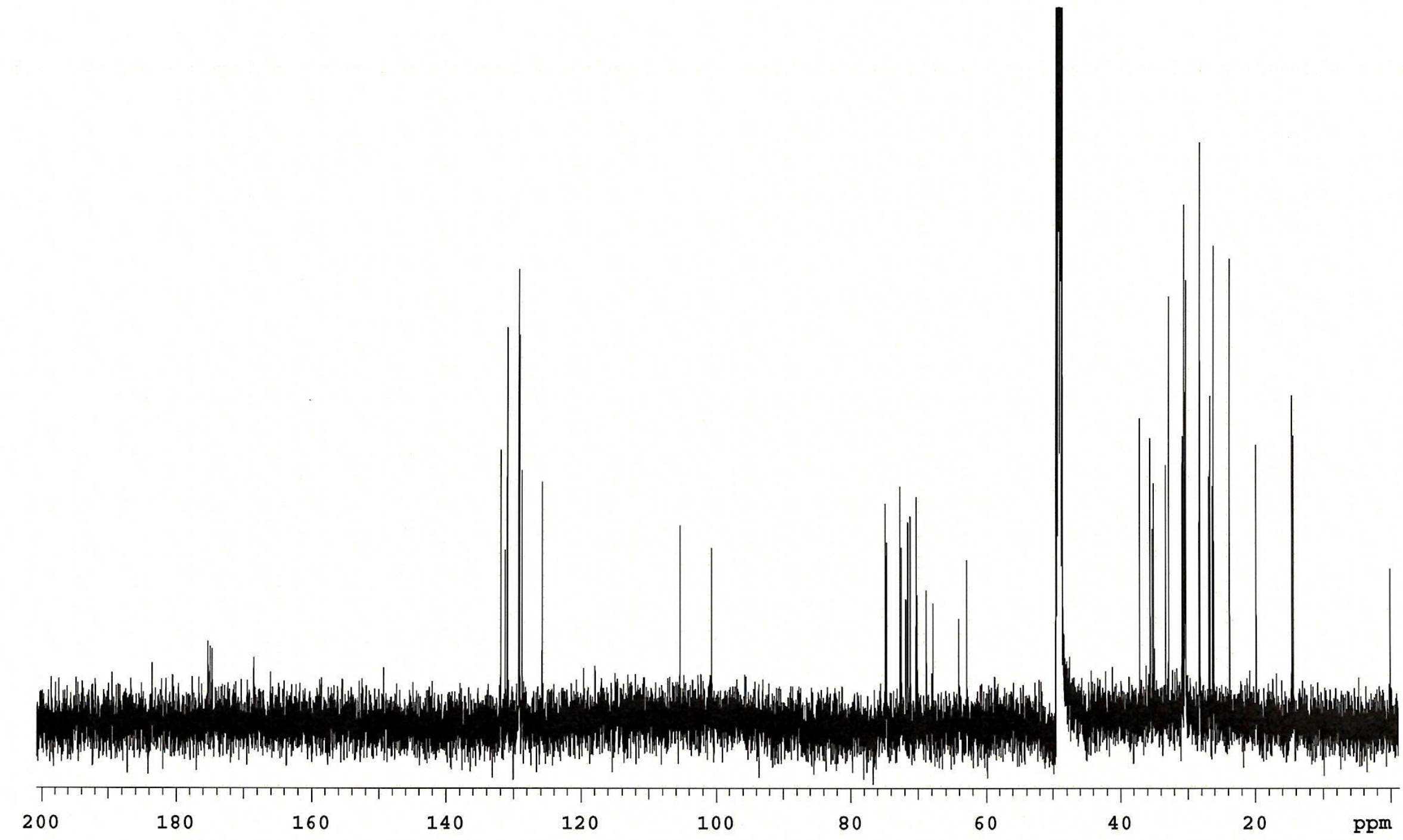
G: NOESY (CD_3OD)

H: ROESY (CD_3OD)

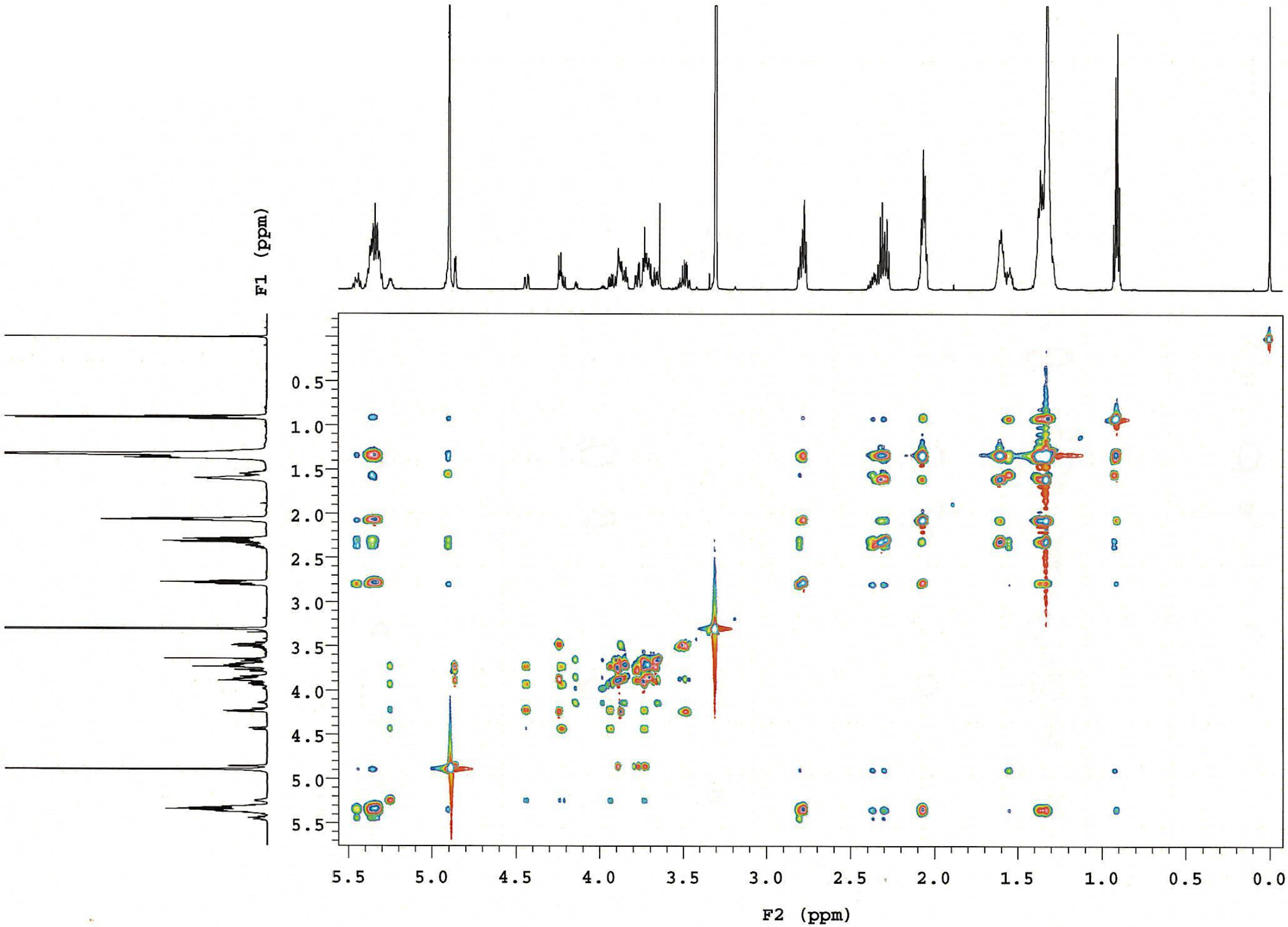
A: ^{1}H NMR (600 MHz, CD_3OD)



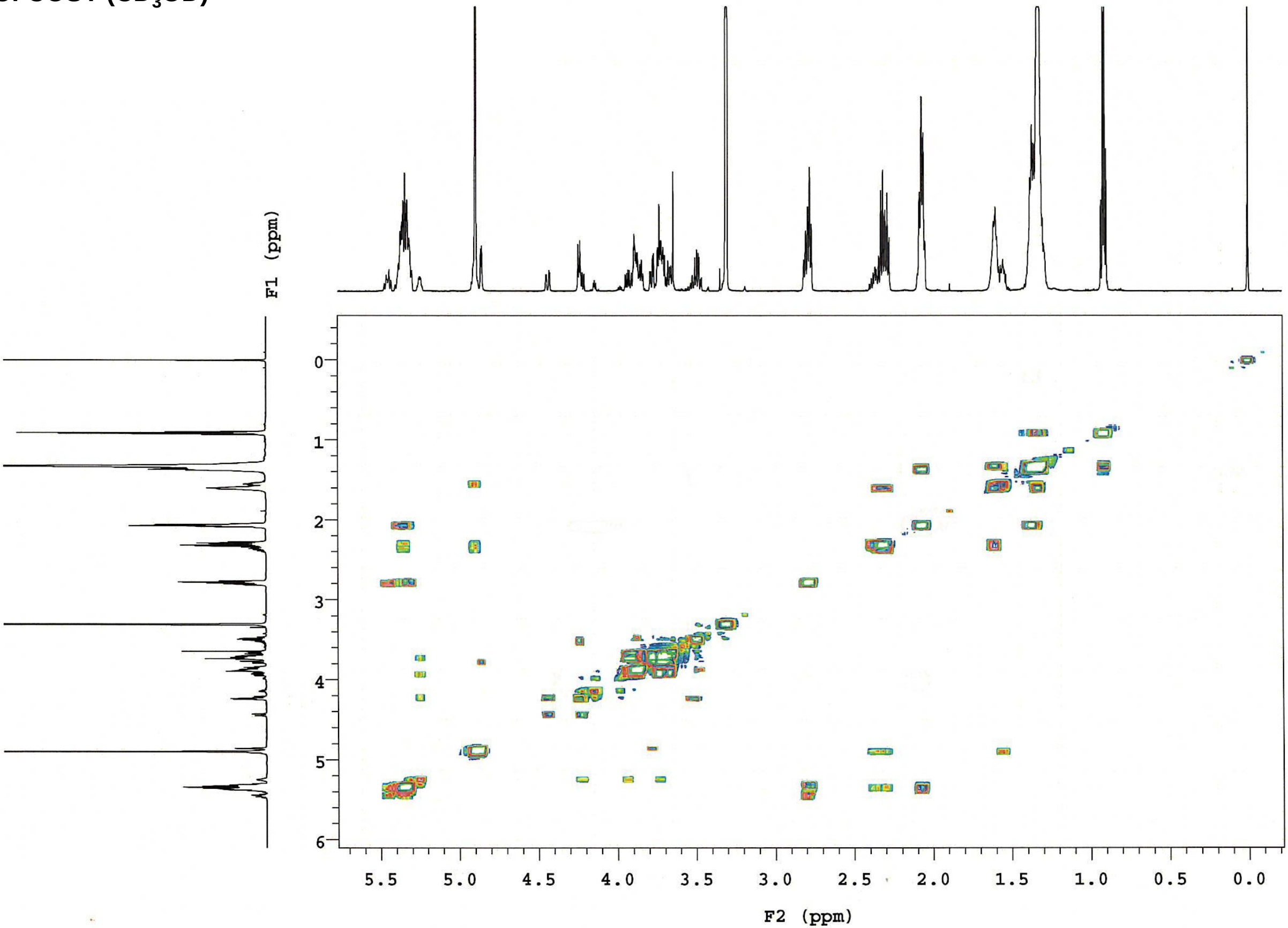
B: ^{13}C NMR (600 MHz, CD_3OD)



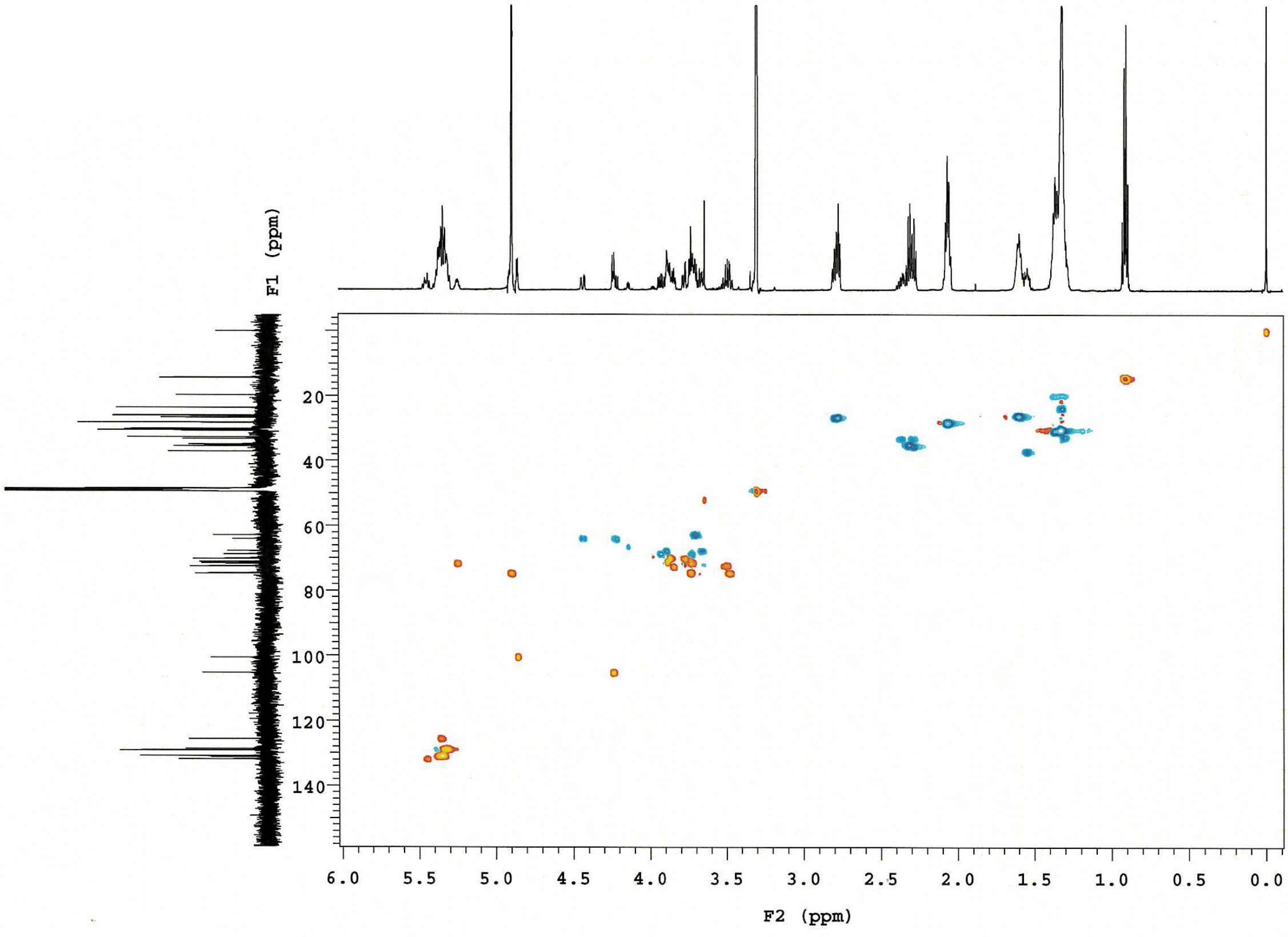
D: TOCSY (CD_3OD)



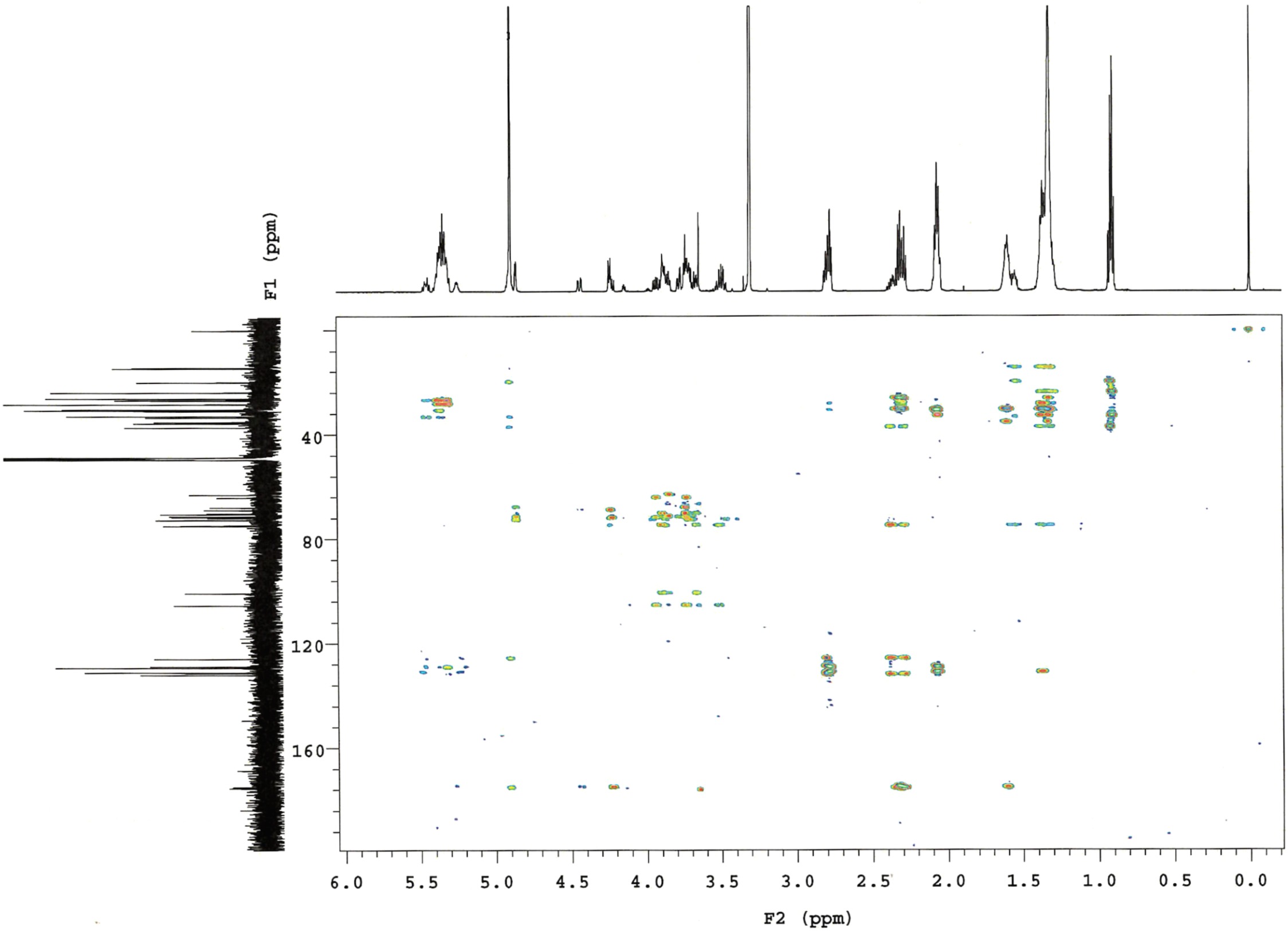
C: COSY (CD_3OD)



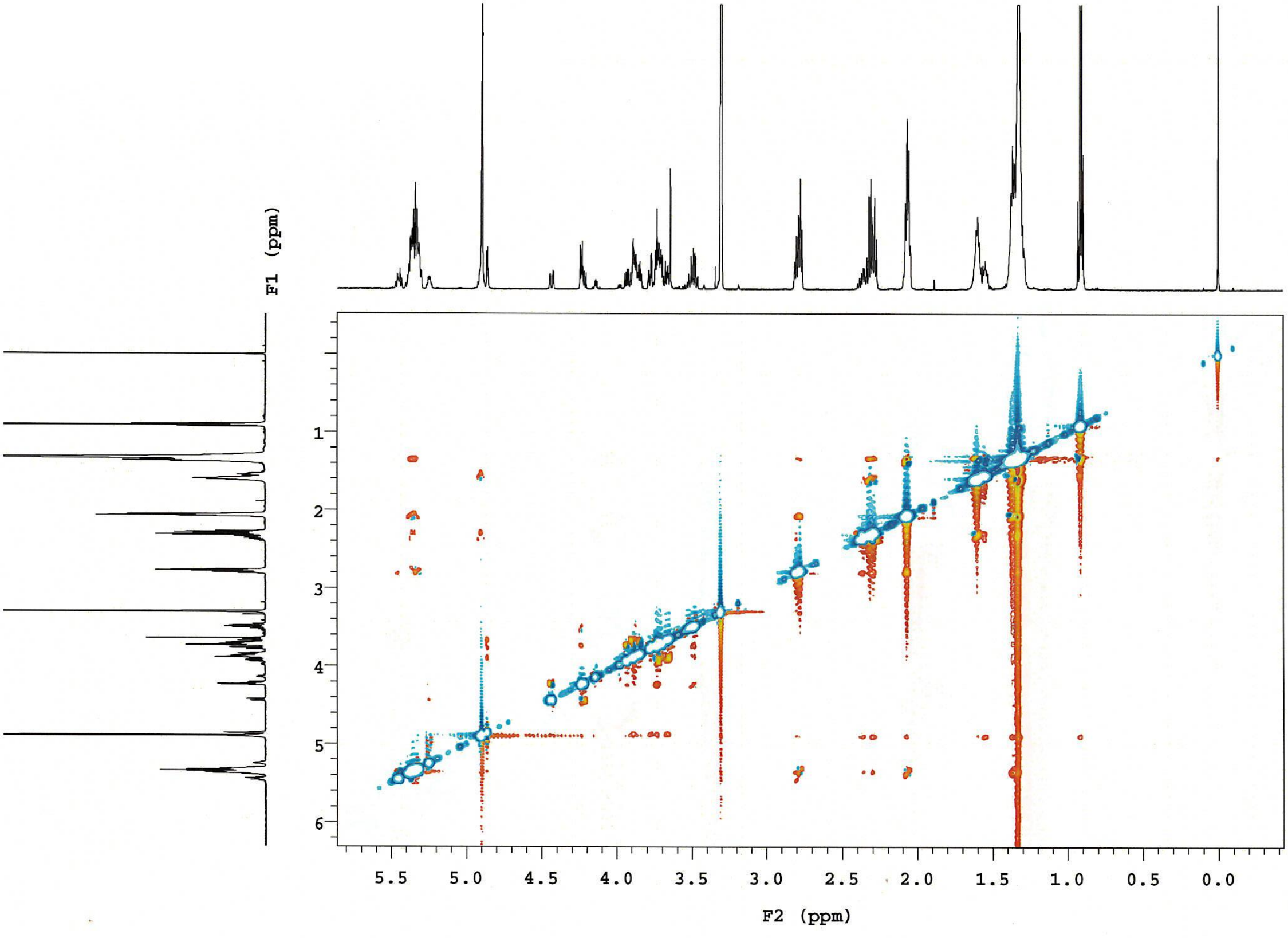
E: HSQC (CD_3OD)


F1 (ppm)
20
40
60
80
100
120
140
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
F2 (ppm)

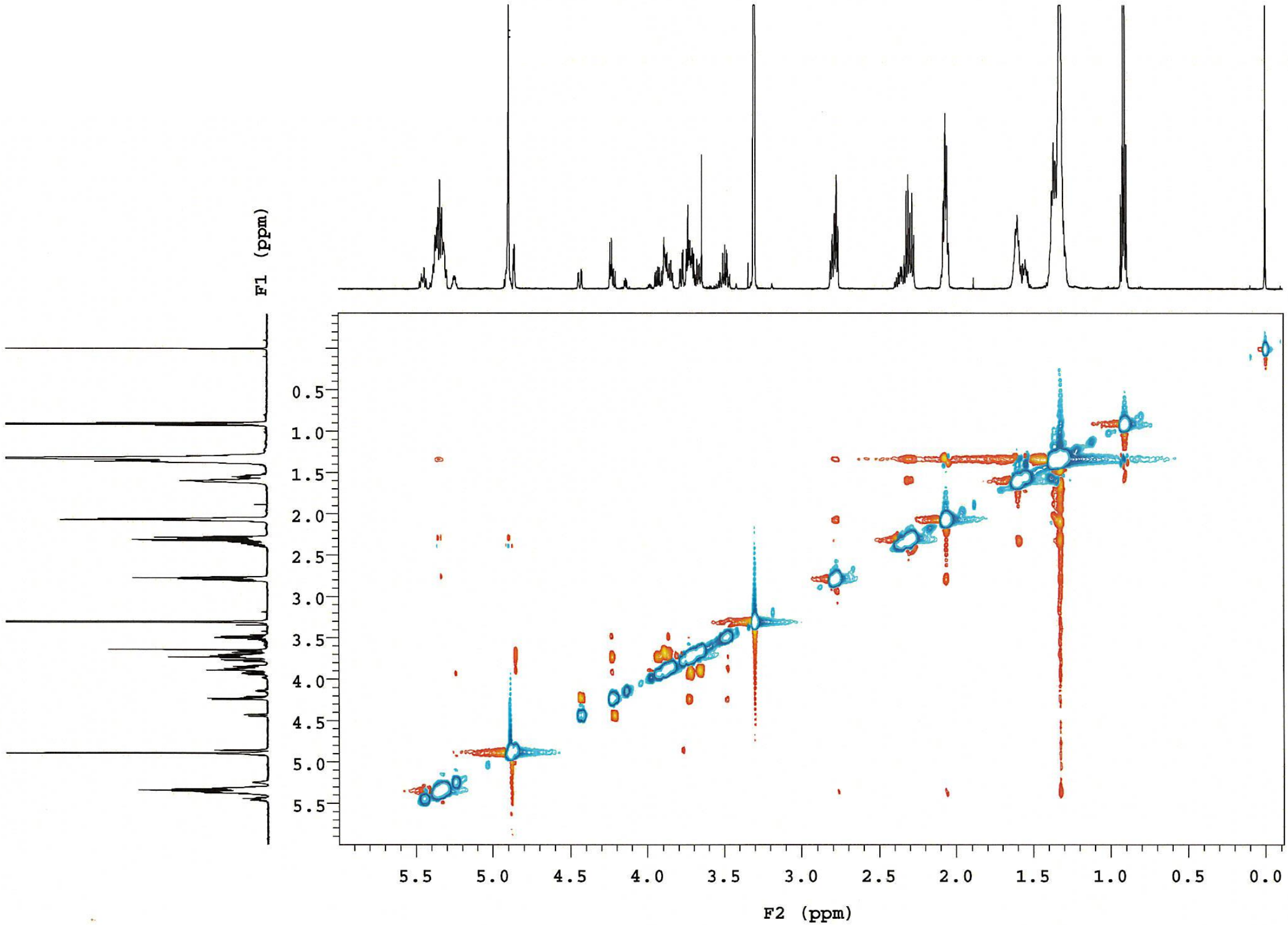
F: HMBC (CD_3OD)



G: NOESY (CD_3OD)



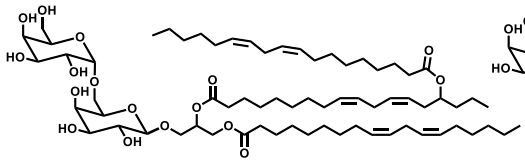
H: ROESY (CD_3OD)



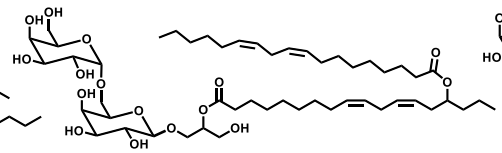
Supplementary Information 2

LC-MS/MS analysis of compounds that could arise from the DGDG-LAHLA metabolism.

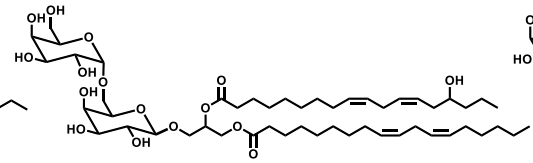
Desorption of galactose (Gla)	Desorption of fatty acids (LA or LAHLA)				
	None	**LA (*sn*-1)**	**LA (LAHLA)**	**LA (*sn*-1), LA (LAHLA)**	**LAHLA (*sn*-2)**
None	DGDG-LAHLA *m/z* 1241.6 > 961.5	A *m/z* 979.6 > 699.6	B *m/z* 979.6 > 683.6	C *m/z* 717.4 > 555.4	D *m/z* 701.4 > 539.4
Gla	E *m/z* 1079.8 > 799.8	F *m/z* 817.5 > 537.5	G *m/z* 817.5 > 521.5	H *m/z* 555.3 > 259.3	I *m/z* 539.3 > 259.3
Gla, Gla	J *m/z* 917.7 > 637.7	K *m/z* 655.5 > 375.5	L *m/z* 655.5 > 359.5	M *m/z* 393.3 > 97.3	N *m/z* 377.3 > 97.3



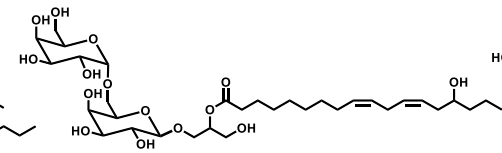
DGDG-LAHLA



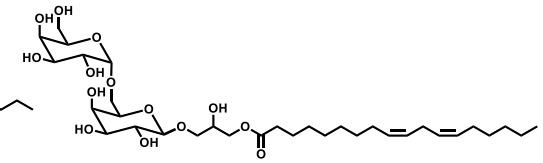
A



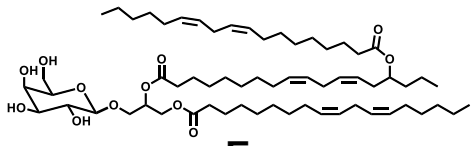
B



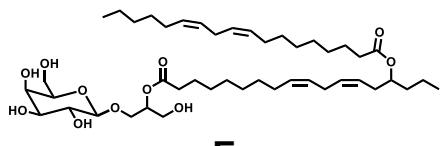
C



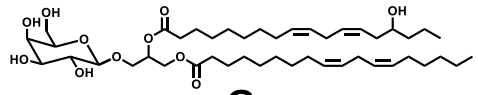
D



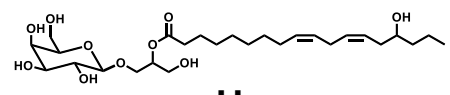
E



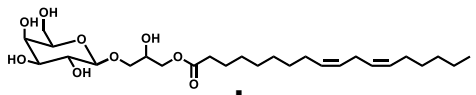
F



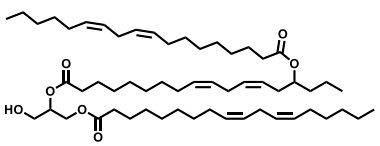
G



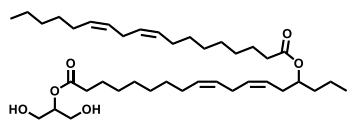
H



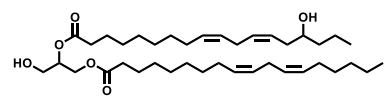
I



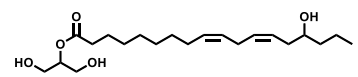
J



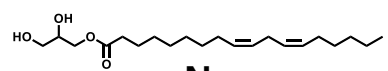
K



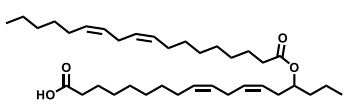
L



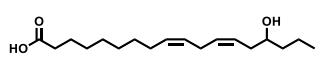
M



N

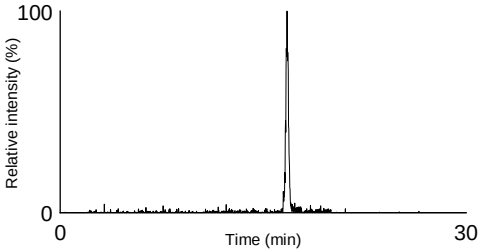


15-LAHLA

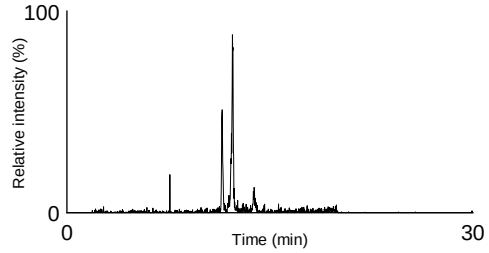


15-HLA

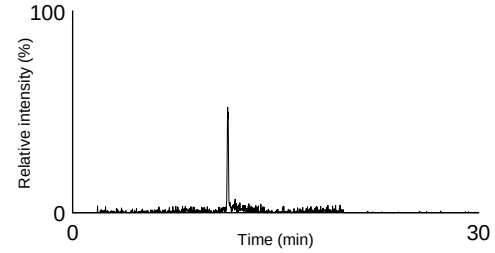
DGDG-LAHLA



A



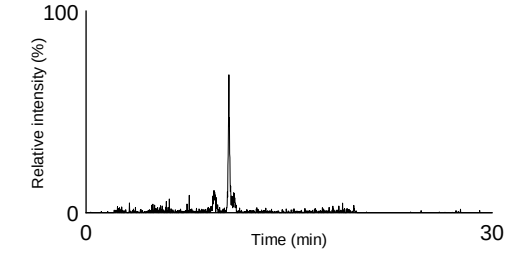
B



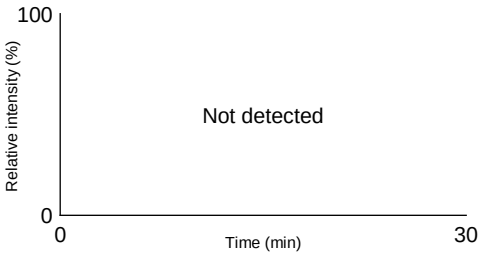
C



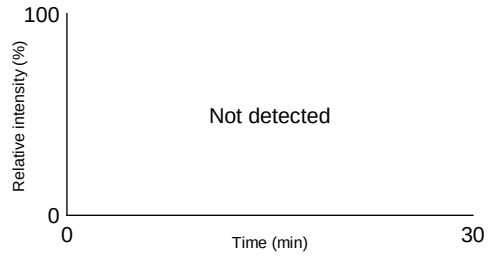
D



E



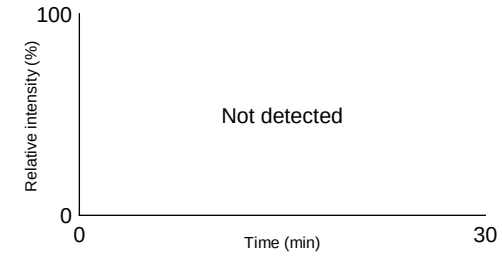
F



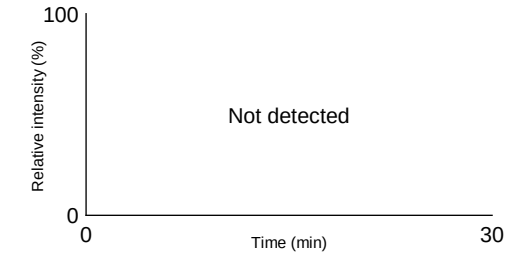
G



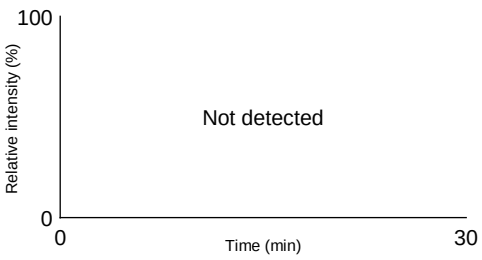
H



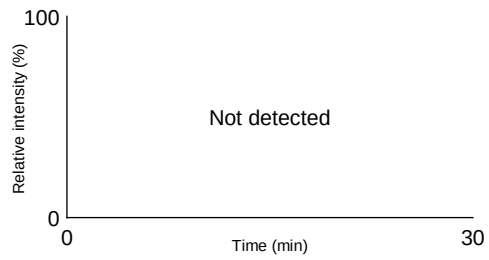
I



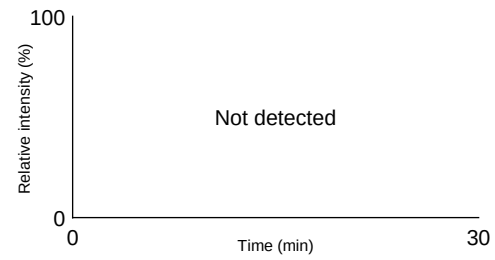
J



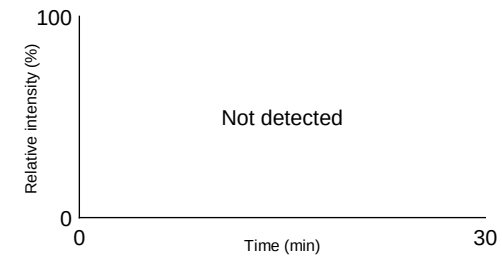
K



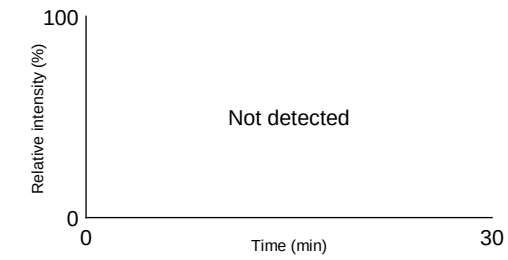
L



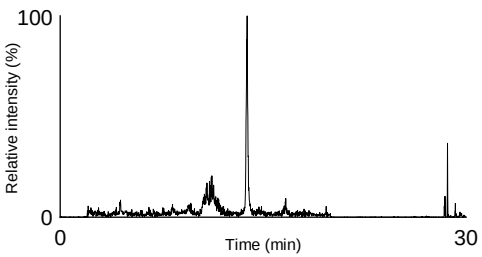
M



N



15-LAHLA



15-HLA

