

# Enhancement of tumor cell immunogenicity and antitumoral properties of a novel platinum derivative conjugated to iron nanoparticles.

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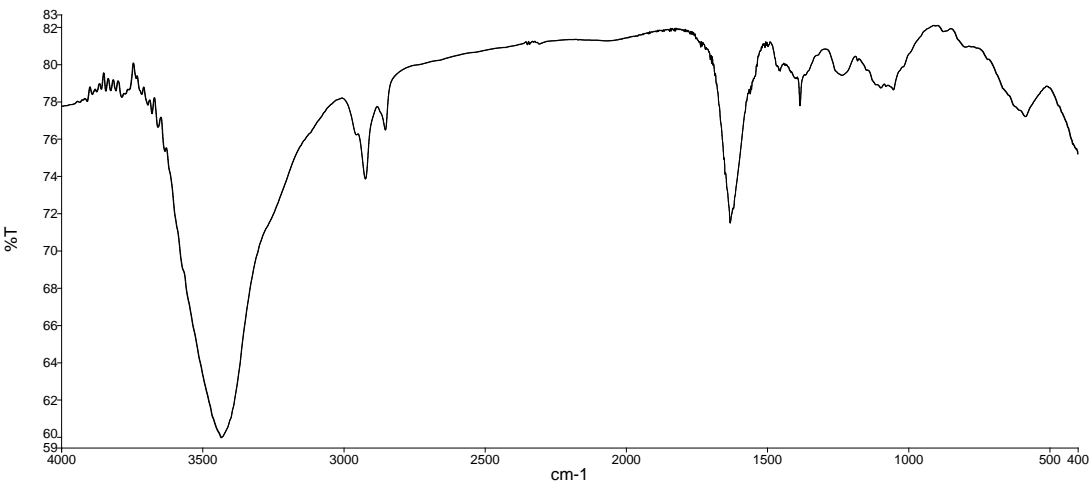
<sup>e</sup>Proteomics Unit, Cancer Research Centre (IBMCC/CSIC/USAL/IBSAL), 37007 Salamanca, Spain.

## Supplementary Figures

### Chemical Characterization

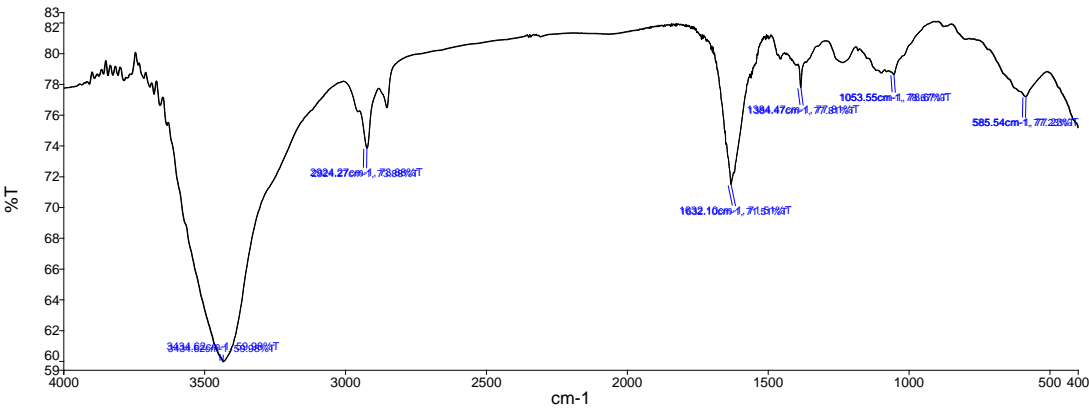
Figure S1

Ptgudca1



Nombre Descripción  
Ptgudca1 Sample 163 By Administrator Date Monday, July 09 2018

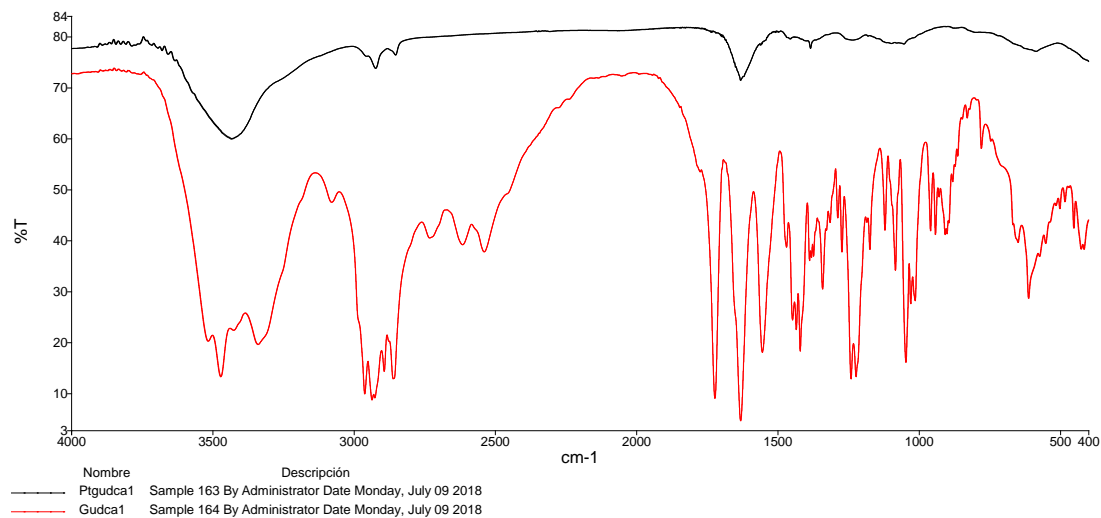
Peak Number	X (cm-1)	Y (%T)
1	3434.62	59.98
2	2924.27	73.88
3	1632.1	71.51
4	1384.47	77.81
5	1053.55	78.67
6	585.54	77.23



Nombre Descripción  
Ptgudca1 Sample 163 By Administrator Date Monday, July 09 2018

Figure S2

Gudca1



Peak Number	X (cm-1)	Y (%T)
1	2962.82	9.98
2	2937.06	8.77
3	2926.79	9.18
4	2861.99	12.94
5	1722.96	9.11
6	1631.83	4.69
7	1241.13	12.9

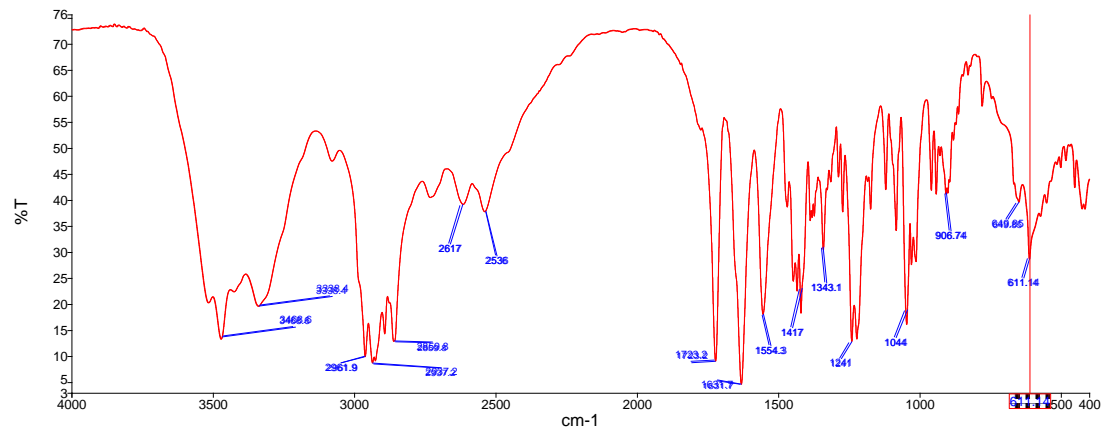
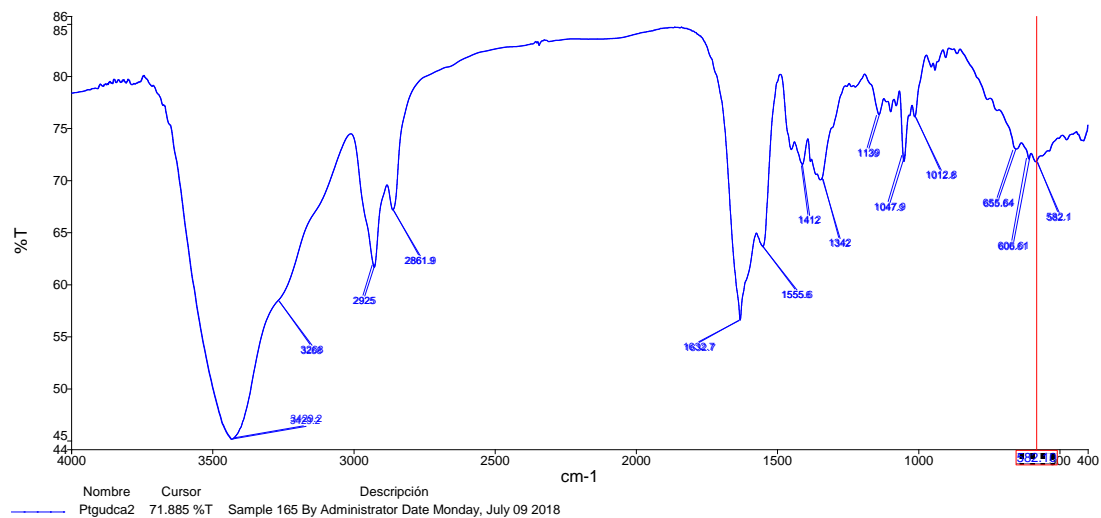
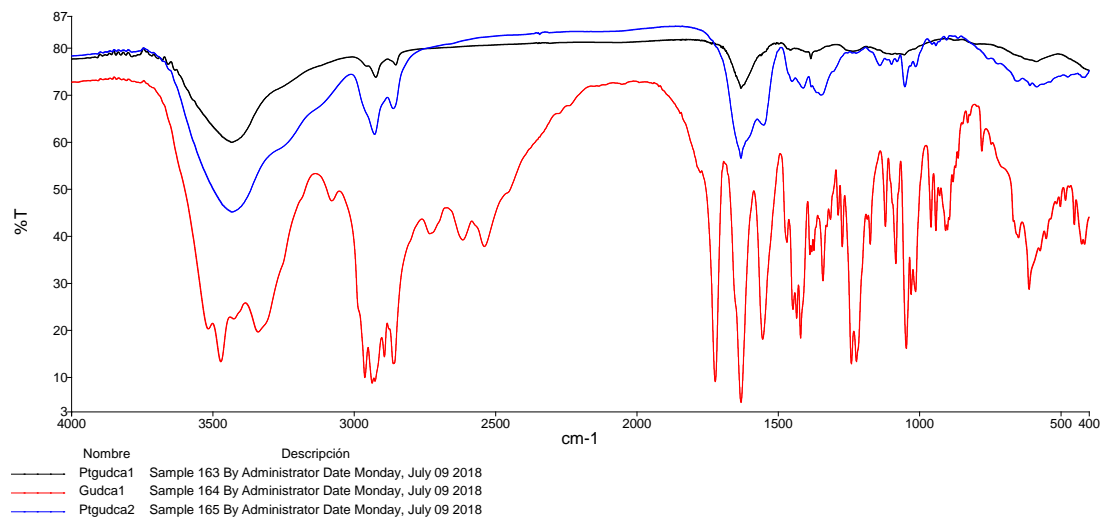


Figure S3

Ptgudca2



Peak Number	X (cm-1)	Y (%T)
1	3433.85	45.17
2	2928.44	61.69
3	2862.61	67.21
4	1631.99	56.62
5	1551.63	63.67

Figure S4

18rmn-0252 GUDCA  
1H CD3OD

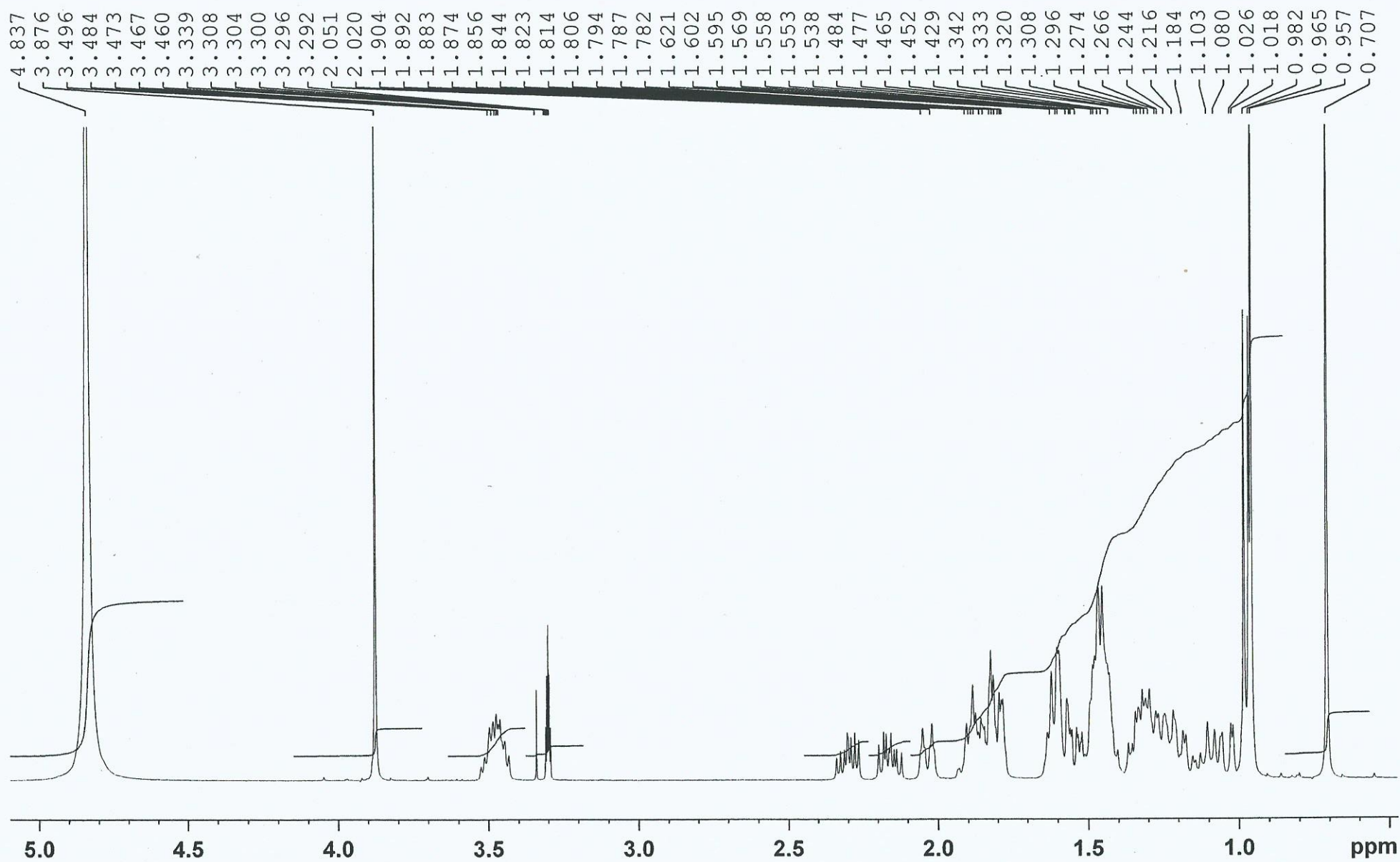


Figure S5

18rmn-0252 GUDCA  
13C CD3OD

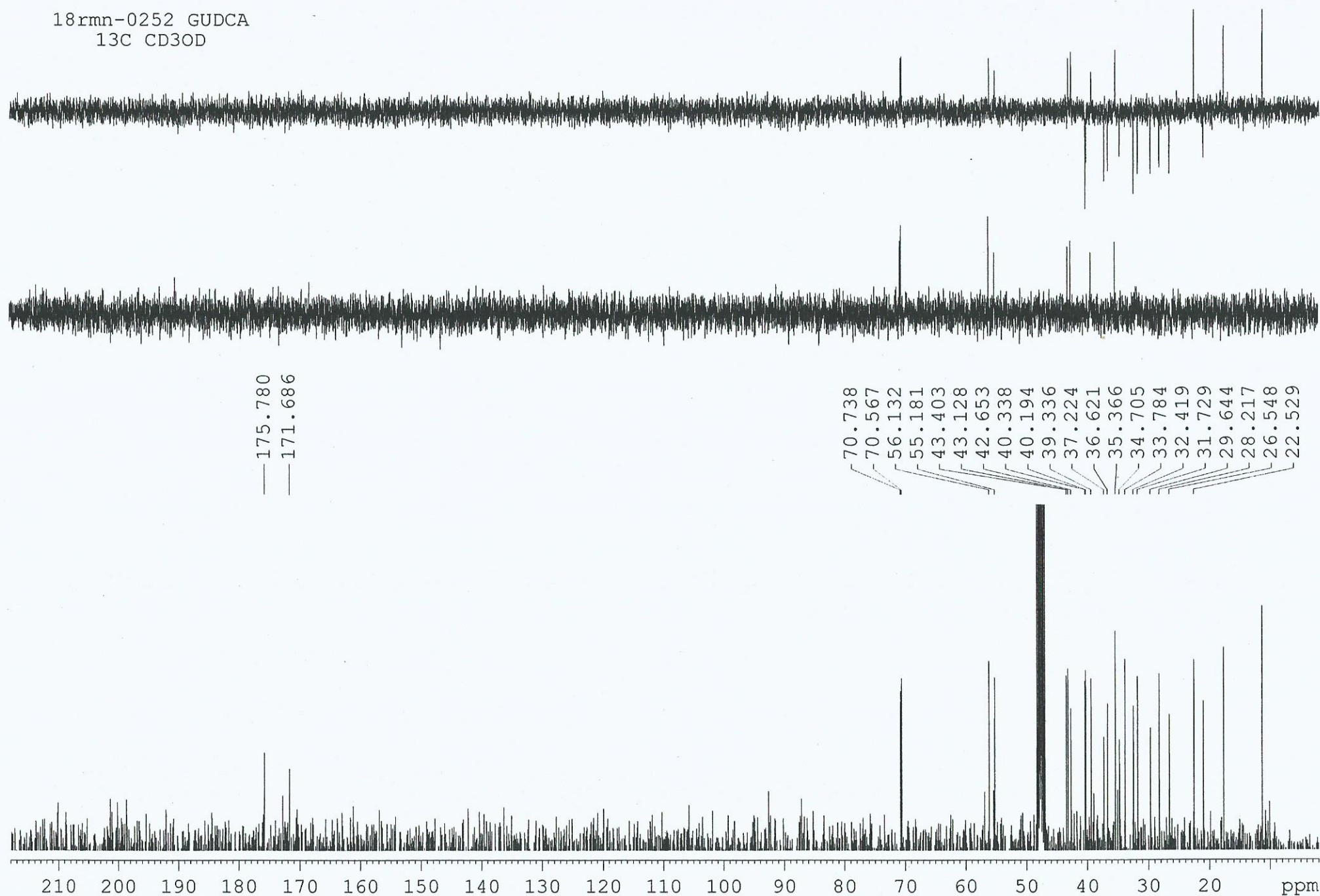


Figure S6

18rmn-0253 GUDCA-Pt  
1H CD3OD

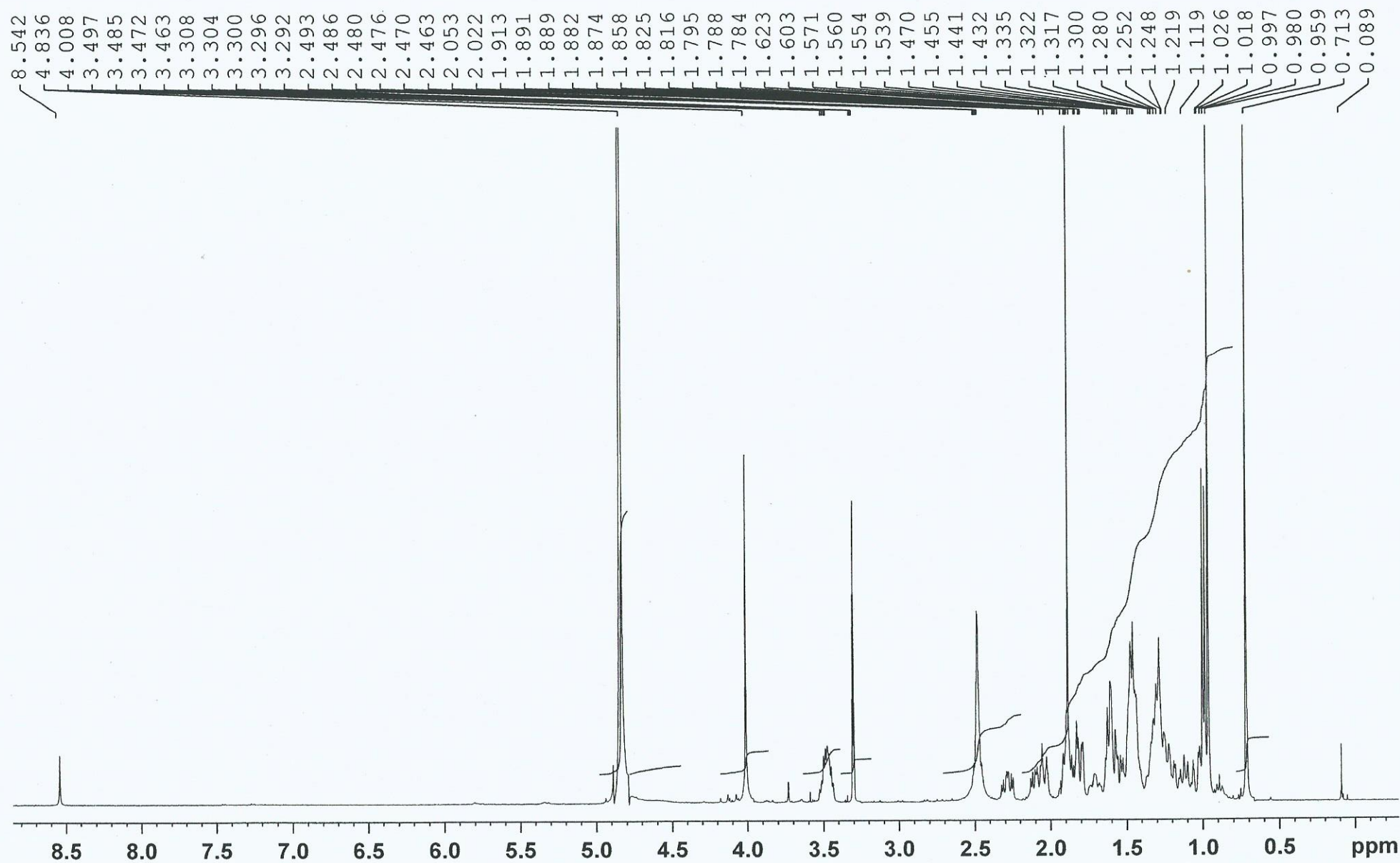




Figure S7

18rmn-0253 Emilio GUDCA-Pt  
13C CD3OD

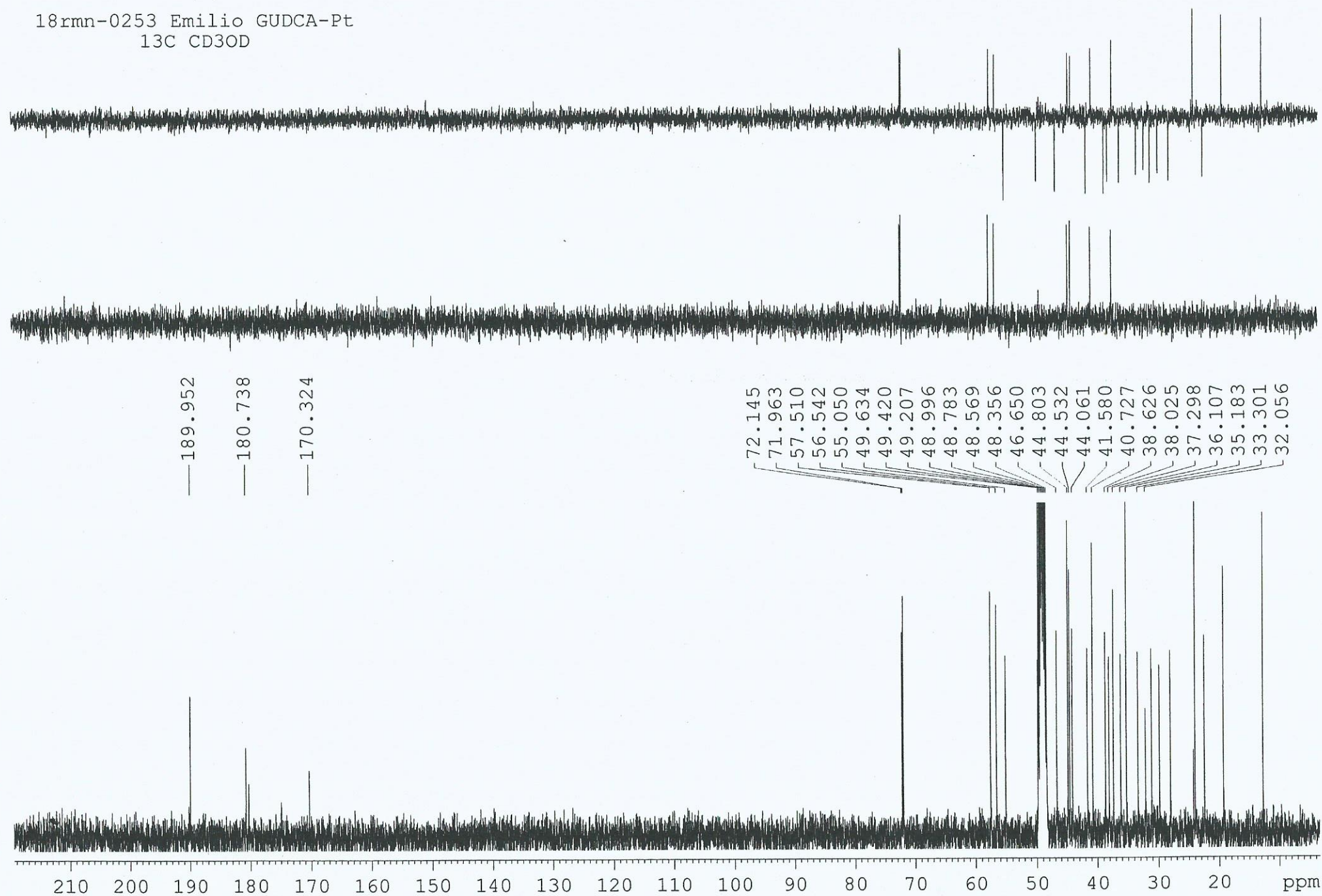




Figure S8

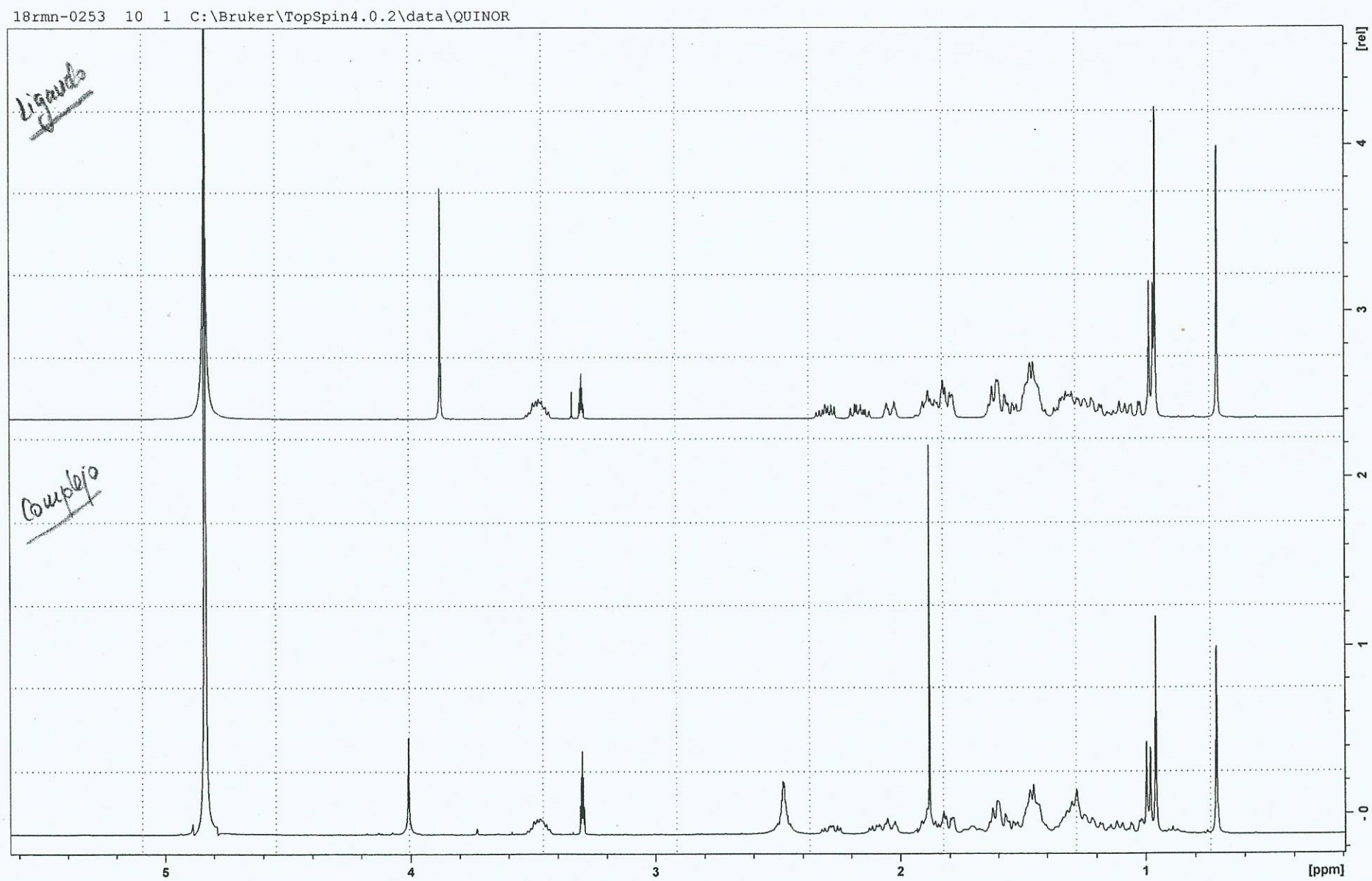
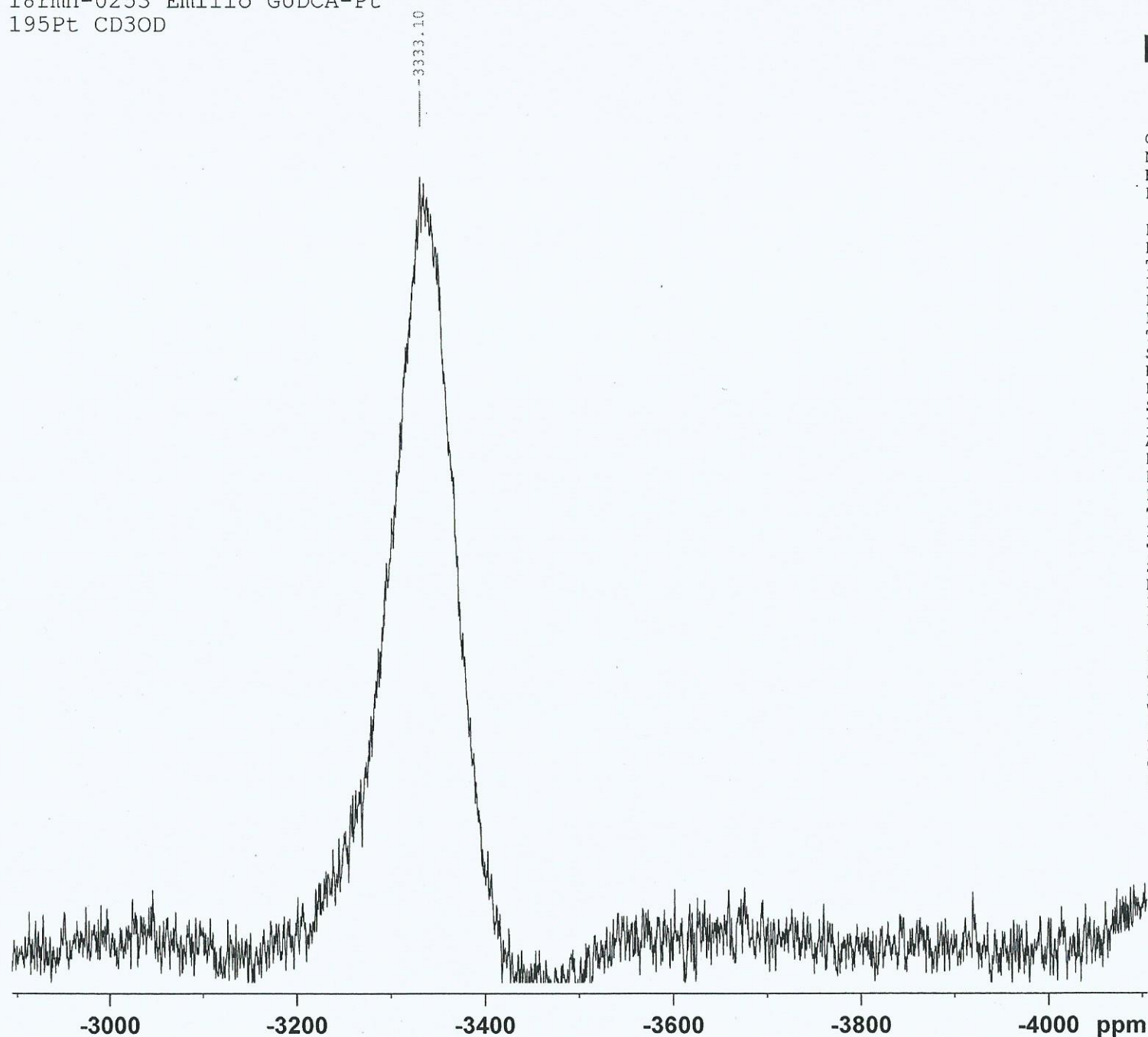


Figure S9

18rmn-0253 Emilio GUDCA-Pt  
195Pt CD3OD



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PROCNO 1

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PULPROG 32768  
TD 63719  
SOLVENT MeOD  
NS 4  
DS 104166.664 Hz  
SWH 6.357829 Hz  
FIDRES 0.1572864 sec  
AQ 8.37054  
RG 4.800 usec  
DW 6.50 usec  
DE 300.0 K  
TE 2.00000000 sec  
D1 1  
TD0 85.7140290 MHz  
SFO1 195Pt  
NUC1 13.00 usec  
P1 47.34999847 W  
PLW1

F2 - Processing parameters  
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WDW EM  
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LB 50.00 Hz  
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PC 1.40

Figure S10

18rmn-0253 Pt-GUDCA  
195 Pt CD3OD

-2269.37



Current Data Parameters  
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EXPNO 15  
PROCNO 1

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SOLVENT MeOD  
NS 32768  
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FIDRES 6.357829 Hz  
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RG 14.6484  
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DE 6.50 usec  
TE 300.0 K  
D1 2.00000000 sec  
TD0 1  
SFO1 85.8430517 MHz  
NUC1 195Pt  
P1 13.00 usec  
PLW1 47.34999847 W

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PC 1.40

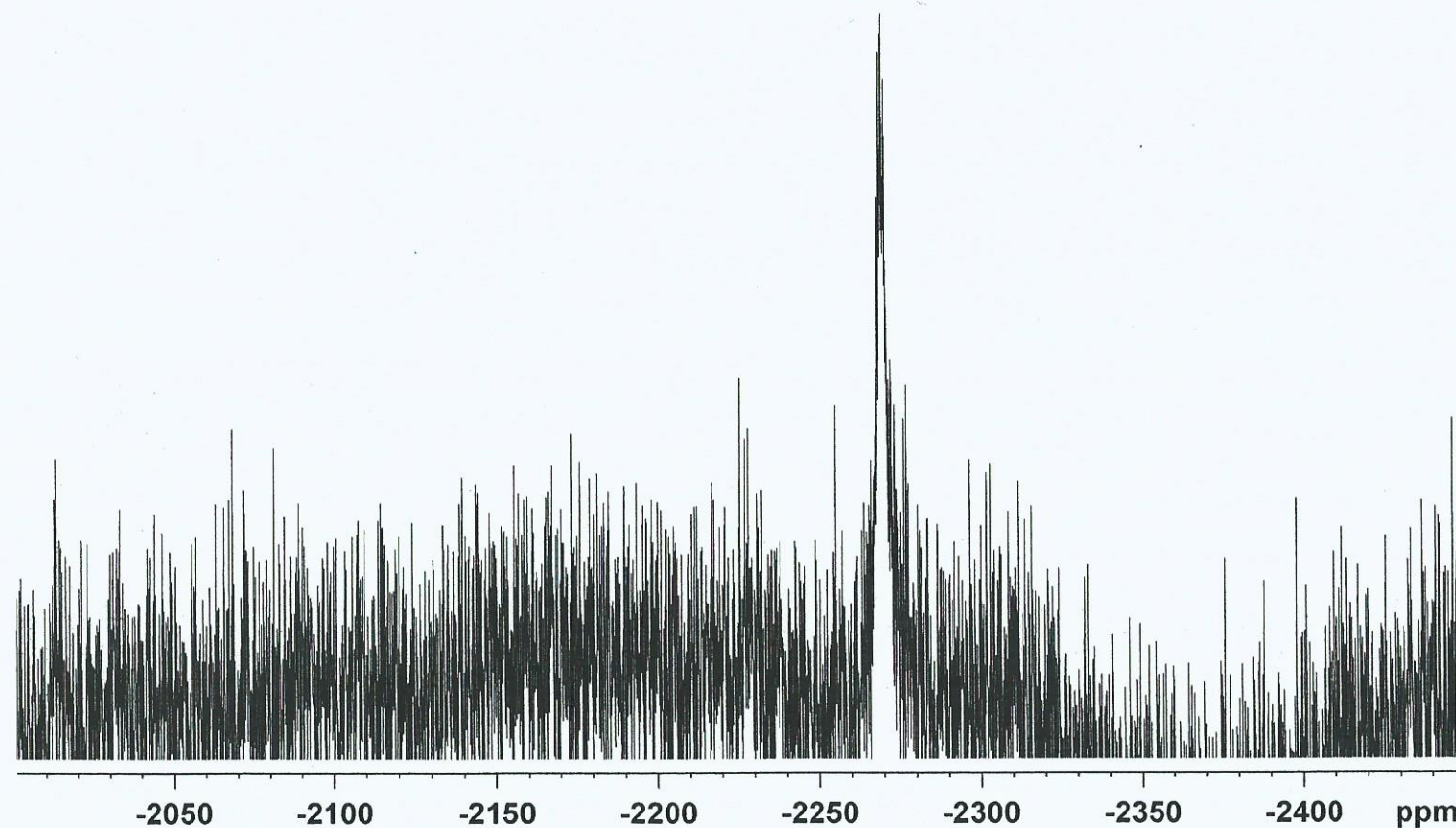




Figure S11

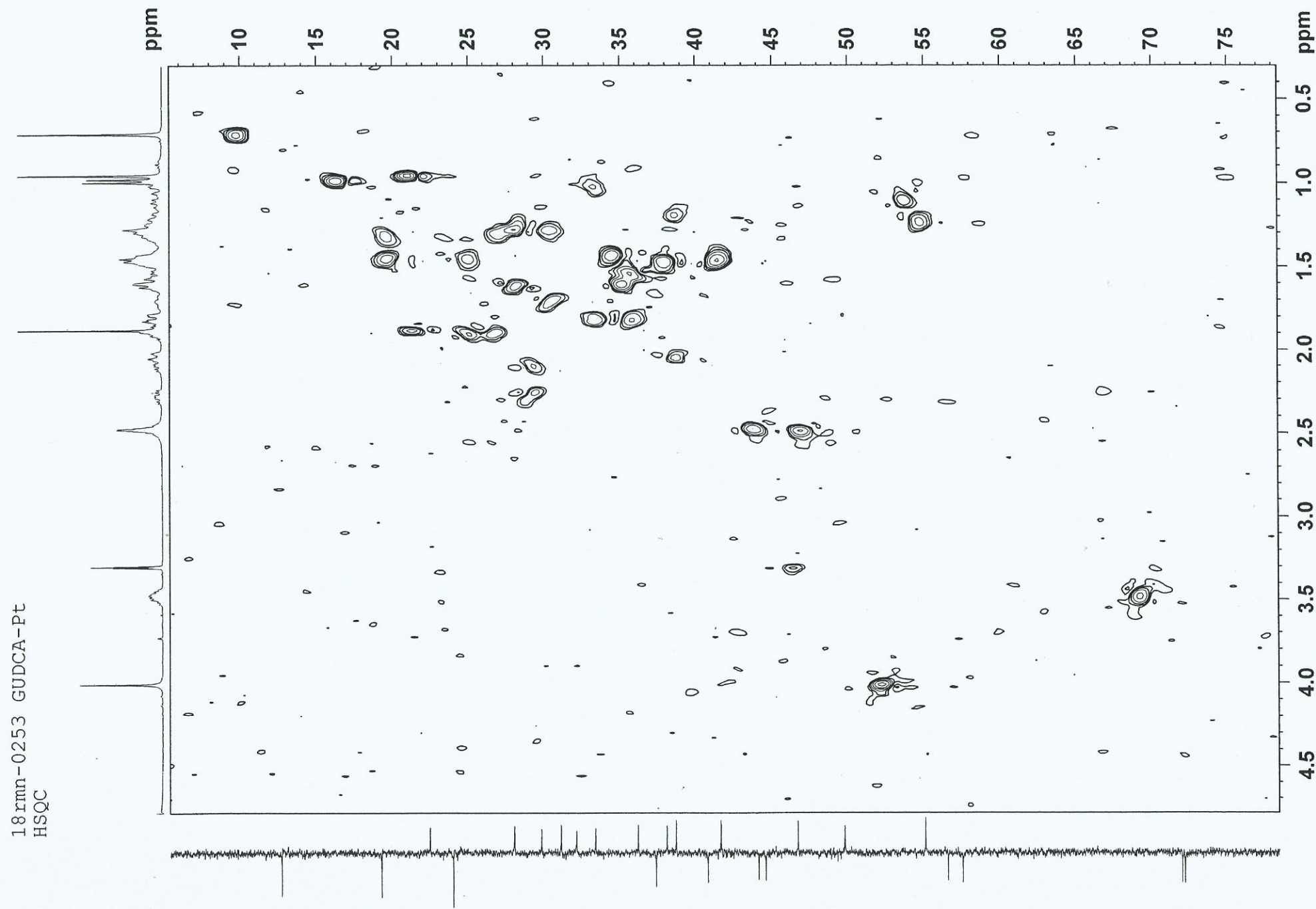


Figure S12

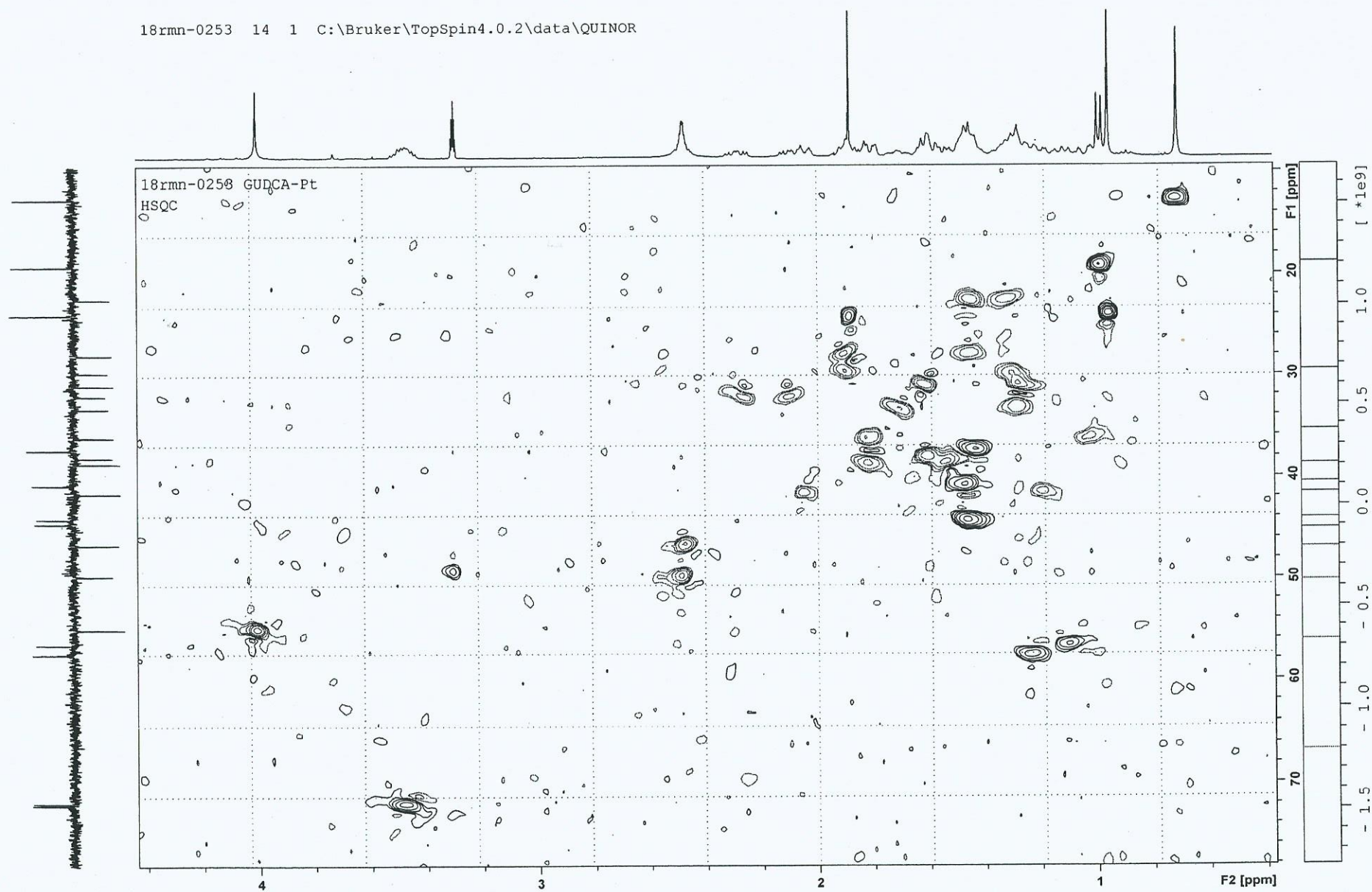




Figure S13

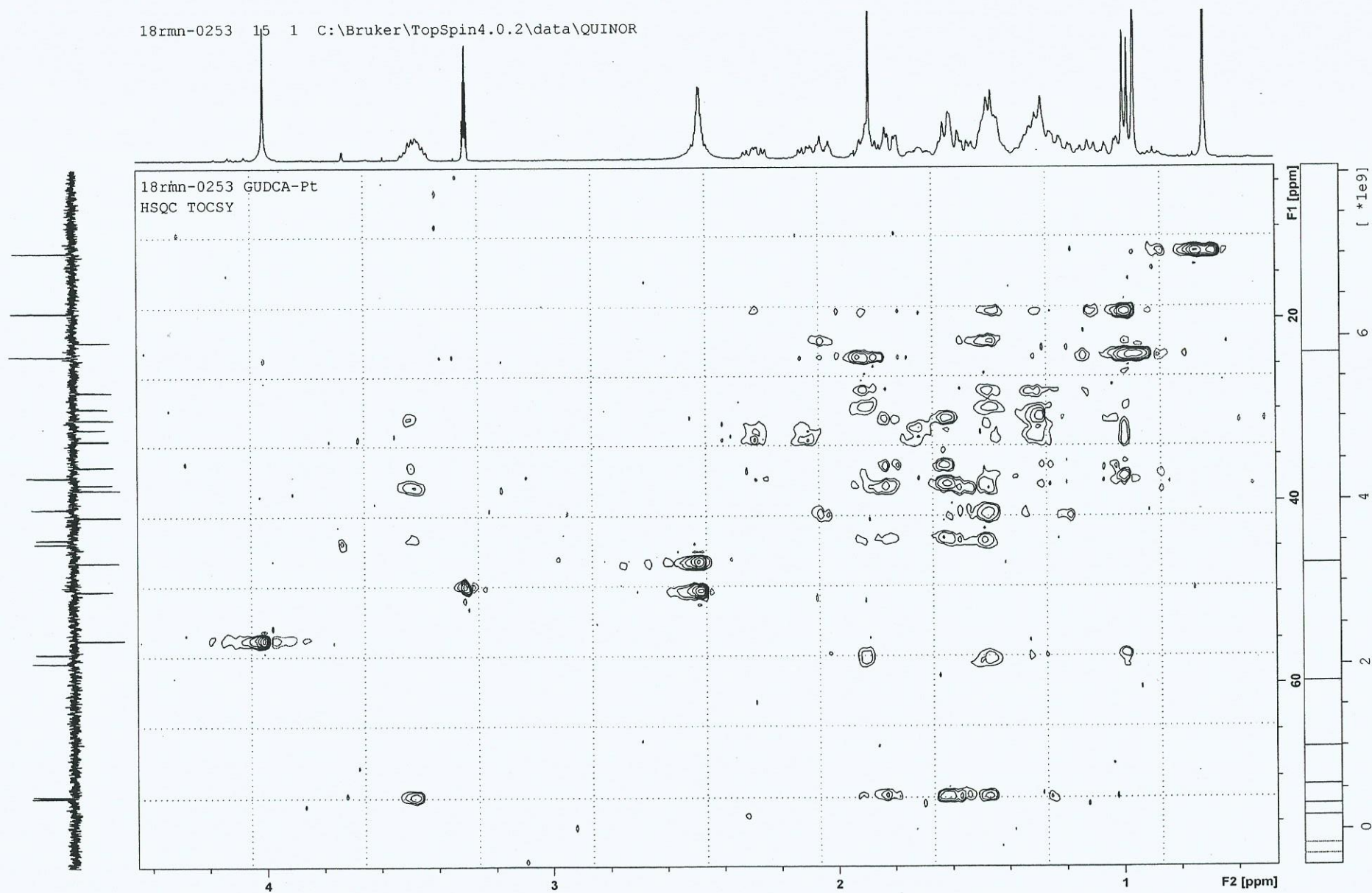
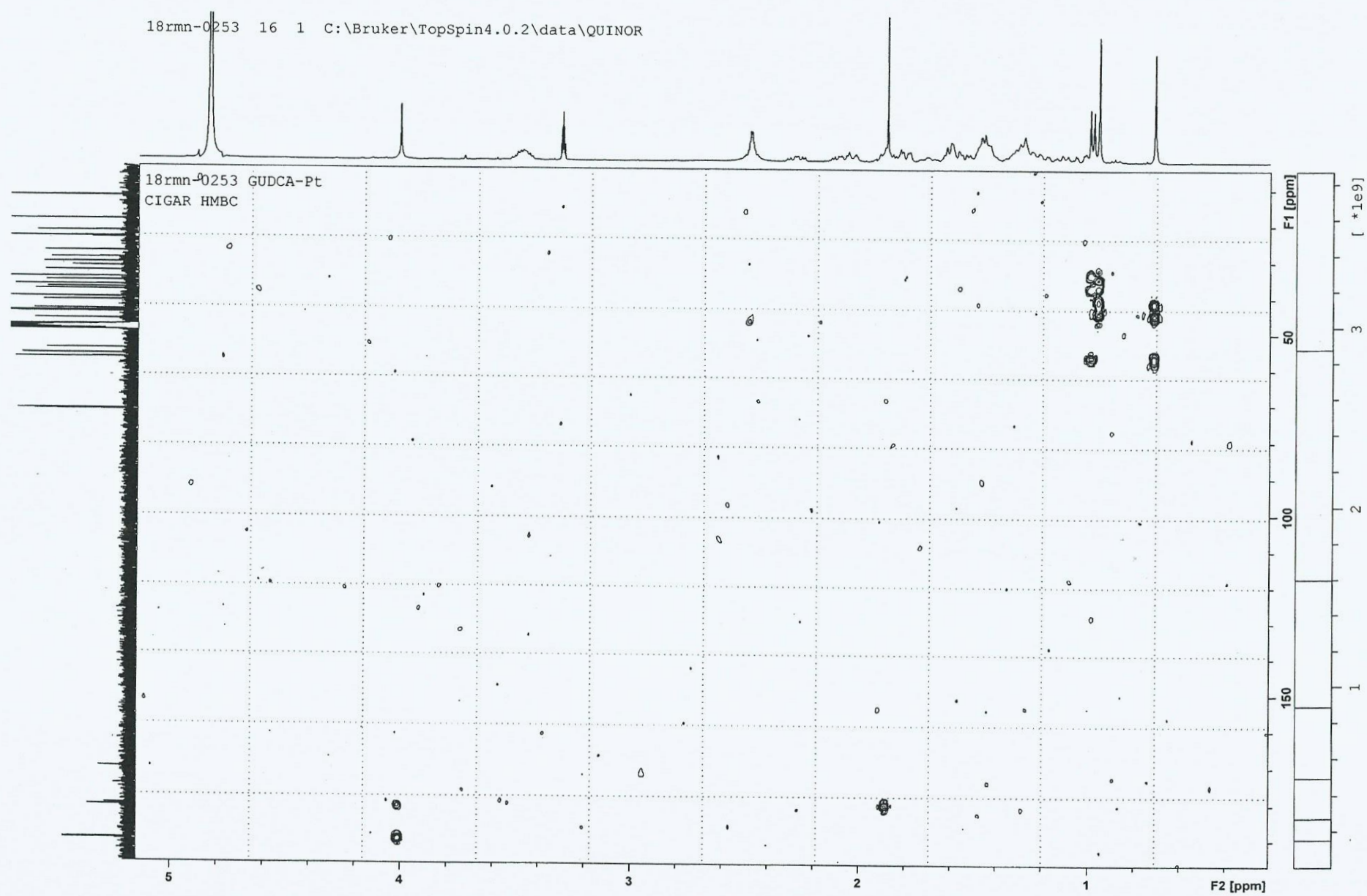


Figure S14



18rmn-0253 GUDCA-Pt  
CIGAR HNBC

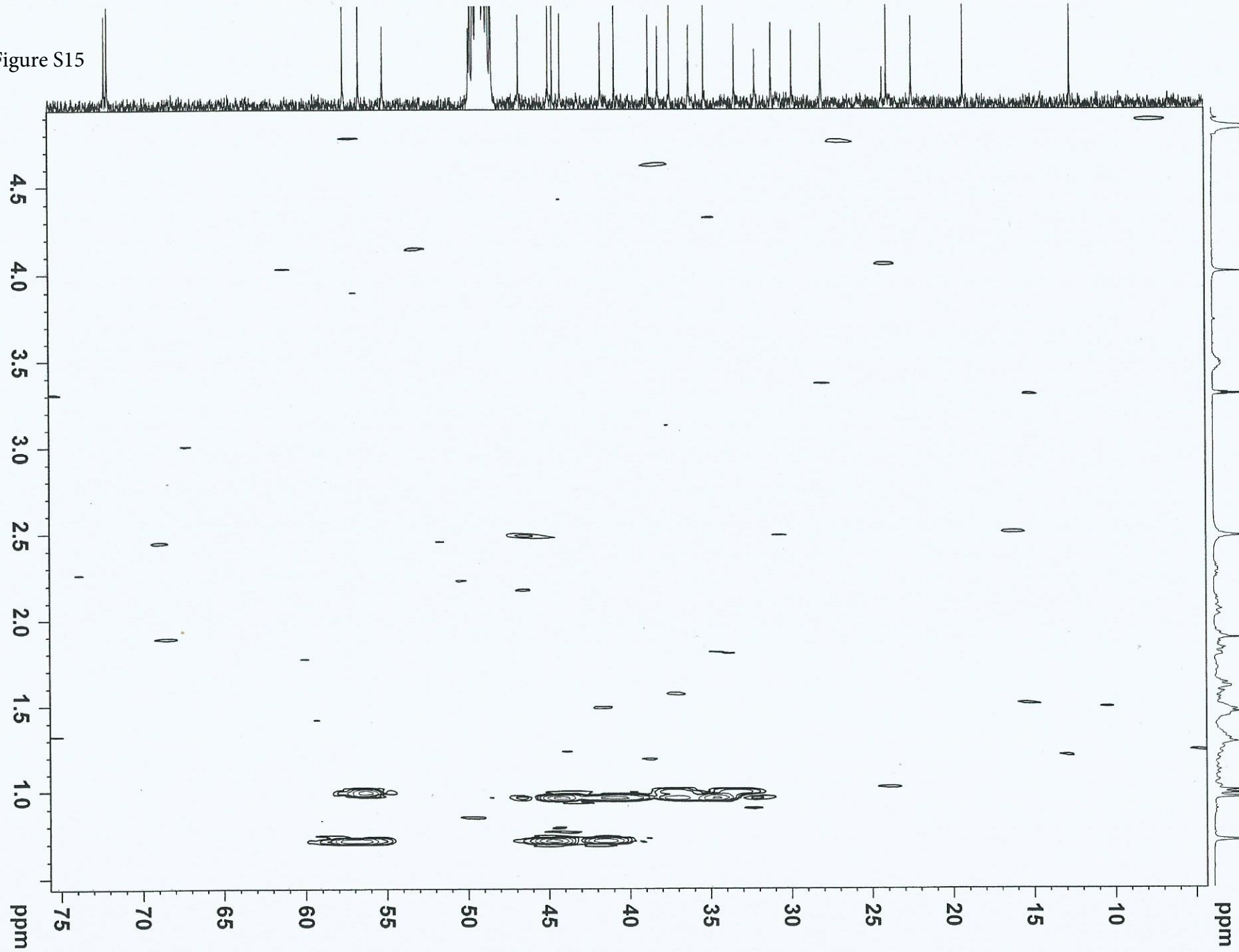


Figure S15

Figure S16

S. G. Espectrometría de Masas - USAL.

Solicitante:

Emilio Rodriguez

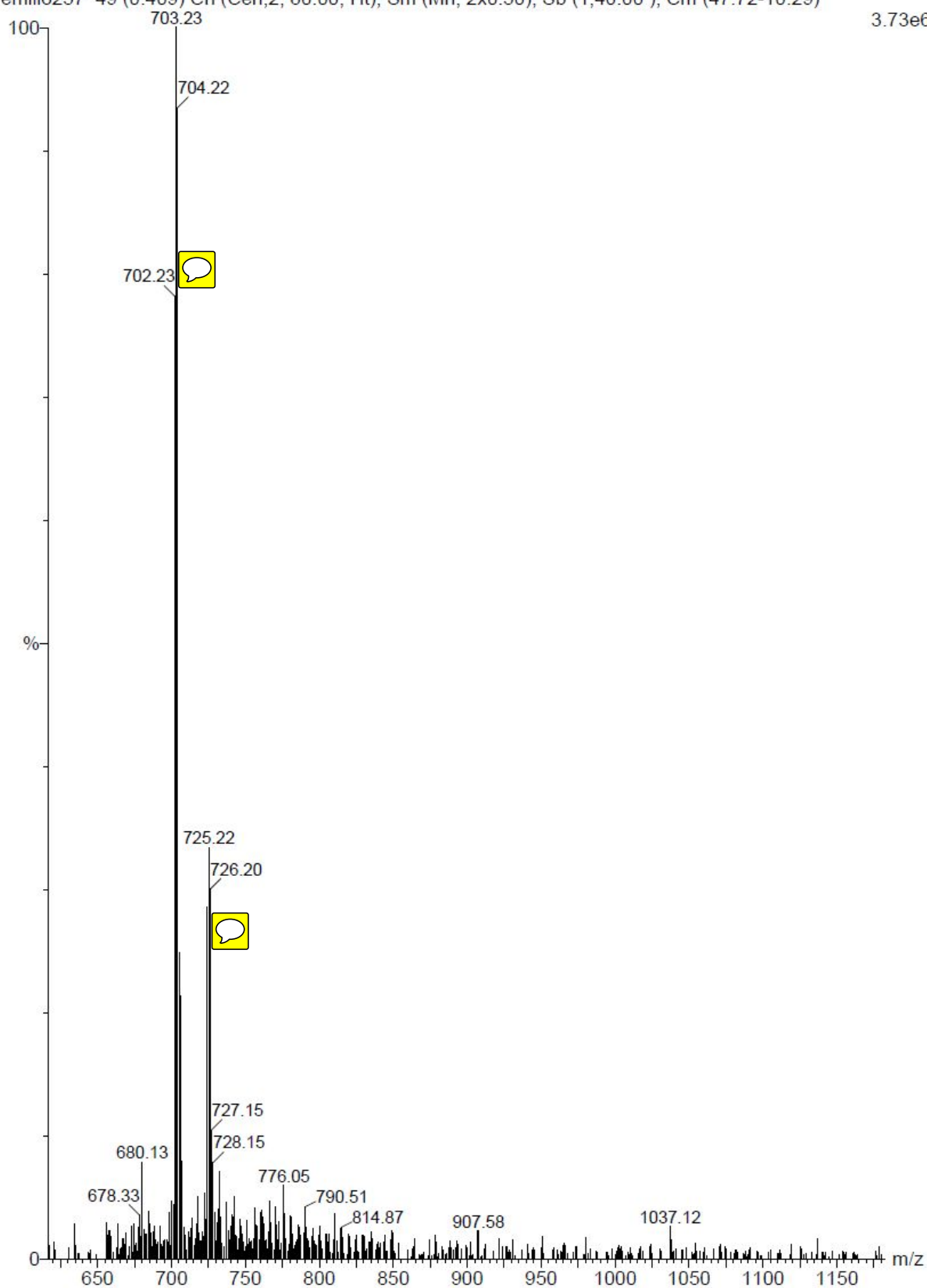
Masa nominal

Emitido por: César Raposo (Responsable SGEM)

GU-Pt3

emilio257 49 (0.409) Cn (Cen,2, 80.00, Ht); Sm (Mn, 2x0.50); Sb (1,40.00 ); Cm (47:72-10:29)

3.73e6



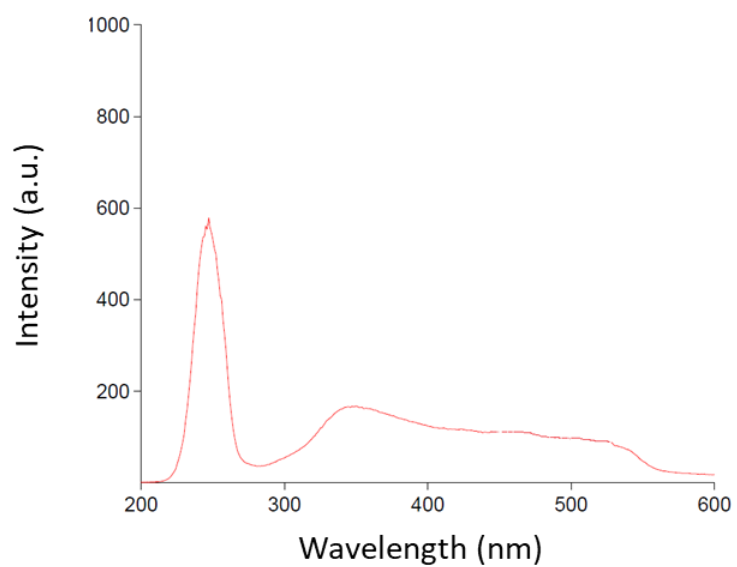


Figure S17: Fluorescence spectrum in water of  $[\text{PtCl}(\text{GUDCA})\text{en}]$  ( $4.33 \times 10^{-4} \text{ M}$ ),  $\lambda_{\text{exc.}} = 240 \text{ nm}$ . Quantum yield,  $Q = 0.10$  (by comparison with quinine sulfate).

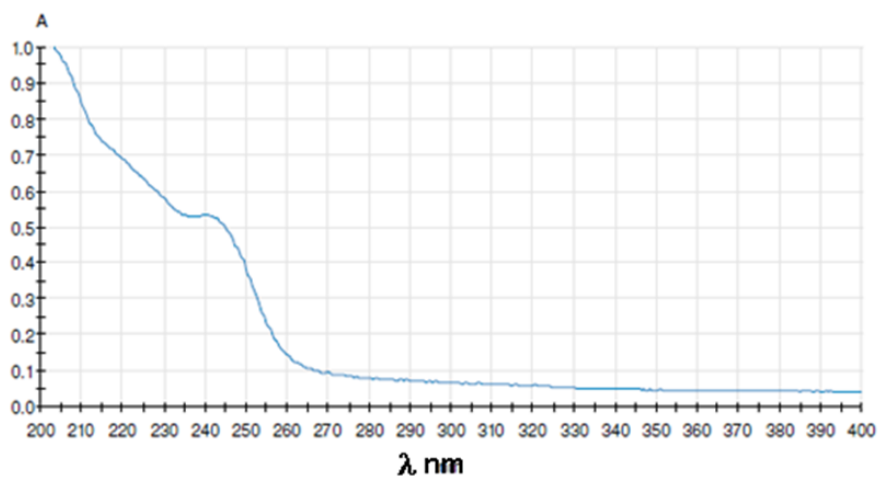


Figure S18: UV spectrum in water of  $[\text{PtCl}(\text{GUDCA})\text{en}]$  ( $6.37 \times 10^{-6} \text{ M}$ )



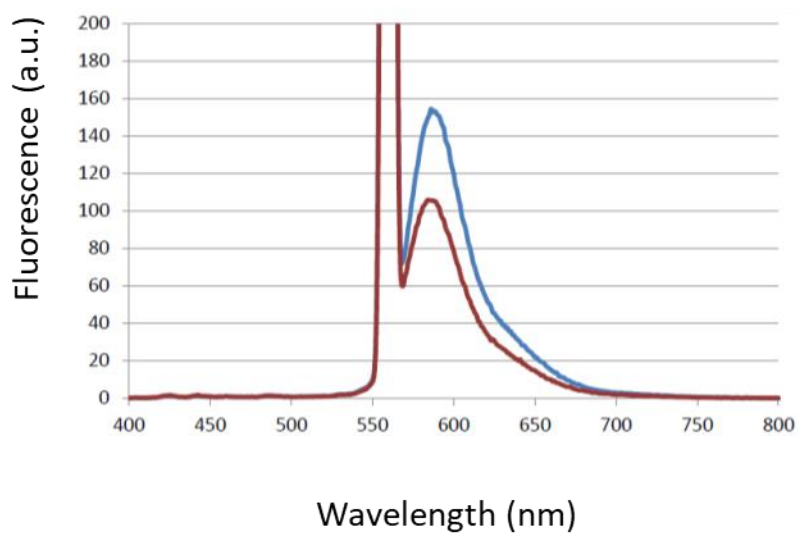


Figure S19: Fluorescence of IONP@BCP ( $C(\text{Fe}_2\text{O}_3) = 0.097 \text{ mg/mL}$ , brown) and IONP@BCP@[PtCl(GUDCA)en] ( $C(\text{Pt}) = 4.95 \times 10^{-4} \text{ M}$ , blue).  $\lambda_{\text{exc.}} = 554 \text{ nm}$ ,  $\lambda_{\text{em.}} = 586 \text{ nm}$ .

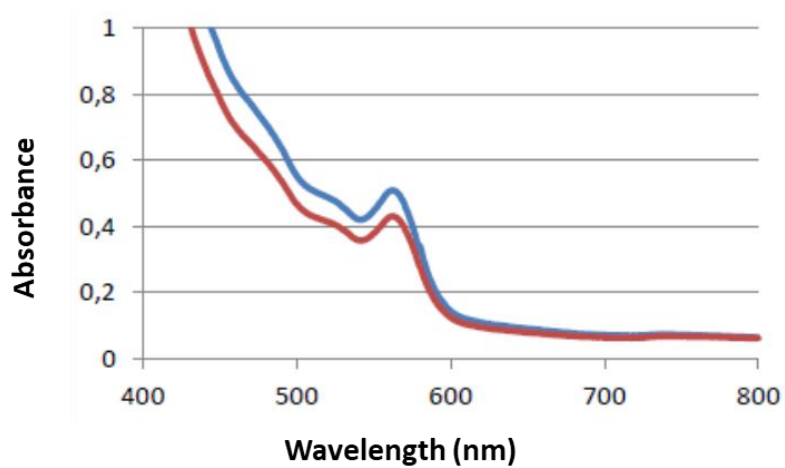


Figure S20: UV-vis spectra of IONP@BCP ( $C(\text{Fe}_2\text{O}_3) = 0.097 \text{ mg/mL}$ , brown) and IONP@BCP@[PtCl(GUDCA)en] ( $C(\text{Pt}) = 4.95 \times 10^{-4} \text{ M}$ , blue).

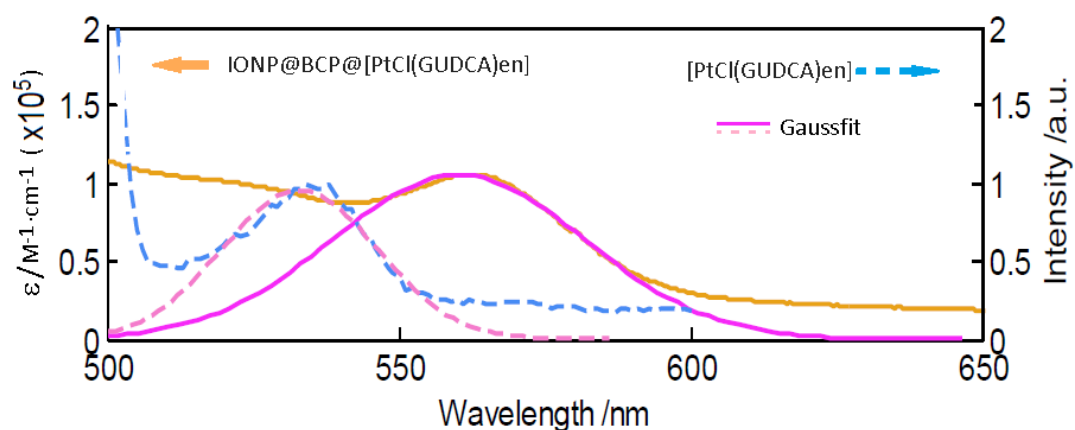


Figure S21: Normalized emission spectrum of  $[\text{PtCl}(\text{GUDCA})\text{en}]$  and absorption spectrum of  $\text{IONP@BCP@[PtCl}(\text{GUDCA})\text{en}]$ . The overlap integral ( $J$ ) expresses the degree of spectral overlap between the donor emission and the acceptor absorption. In this case:  $J = 4.296 \times 10^{15} \text{ nm}^4 / (\text{M} \cdot \text{cm})$ .

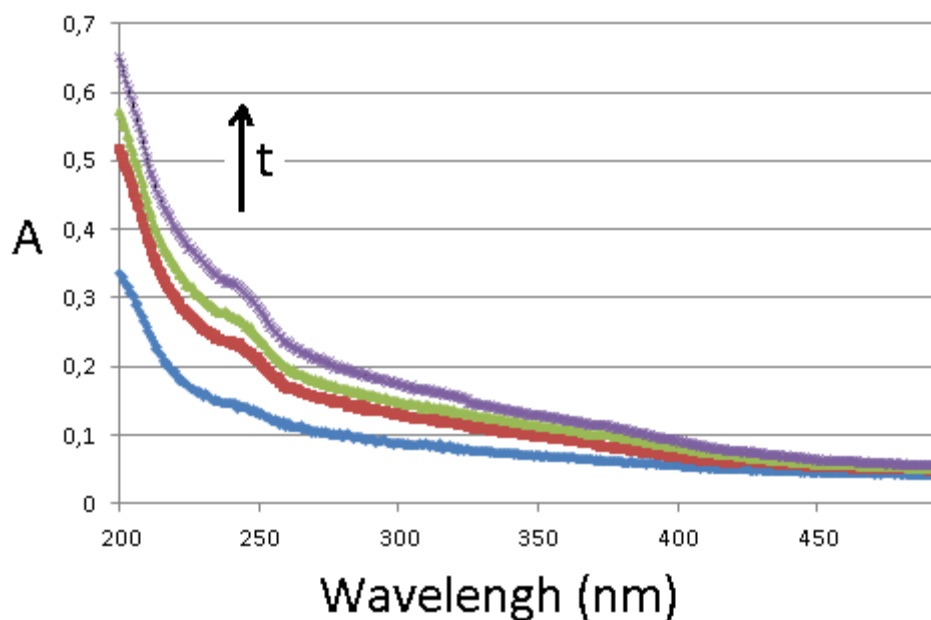


Figure S22: UV spectrum of Pt release versus time showing the characteristic shoulder of  $[\text{PtCl}(\text{GUDCA})\text{en}]$  at 240 nm.

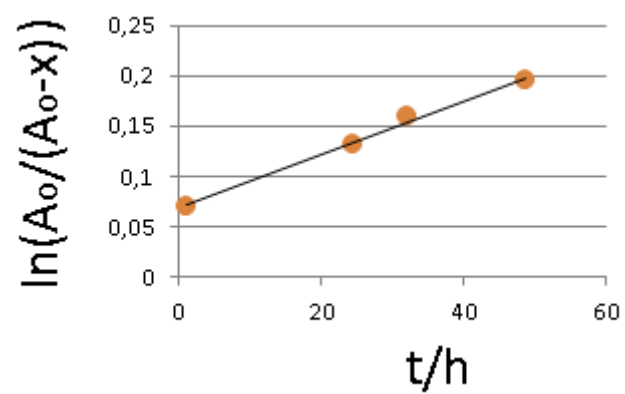
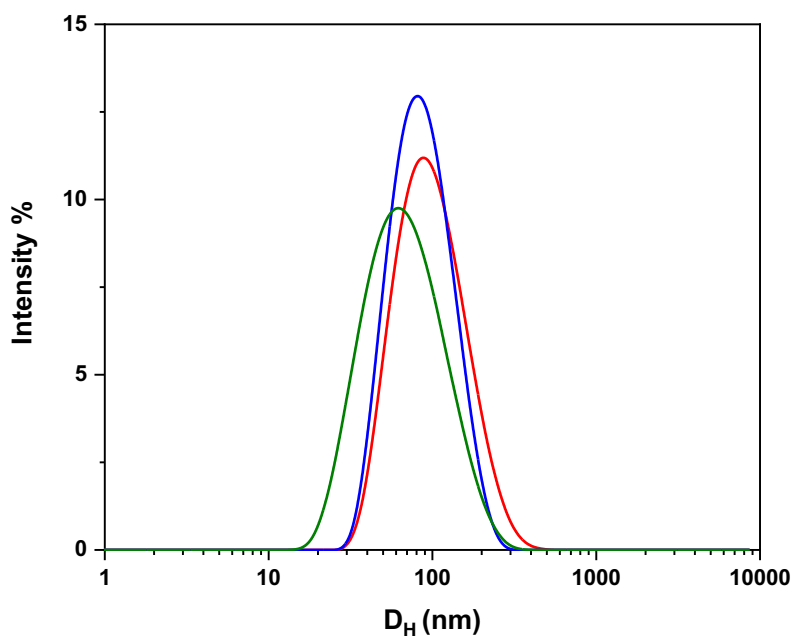


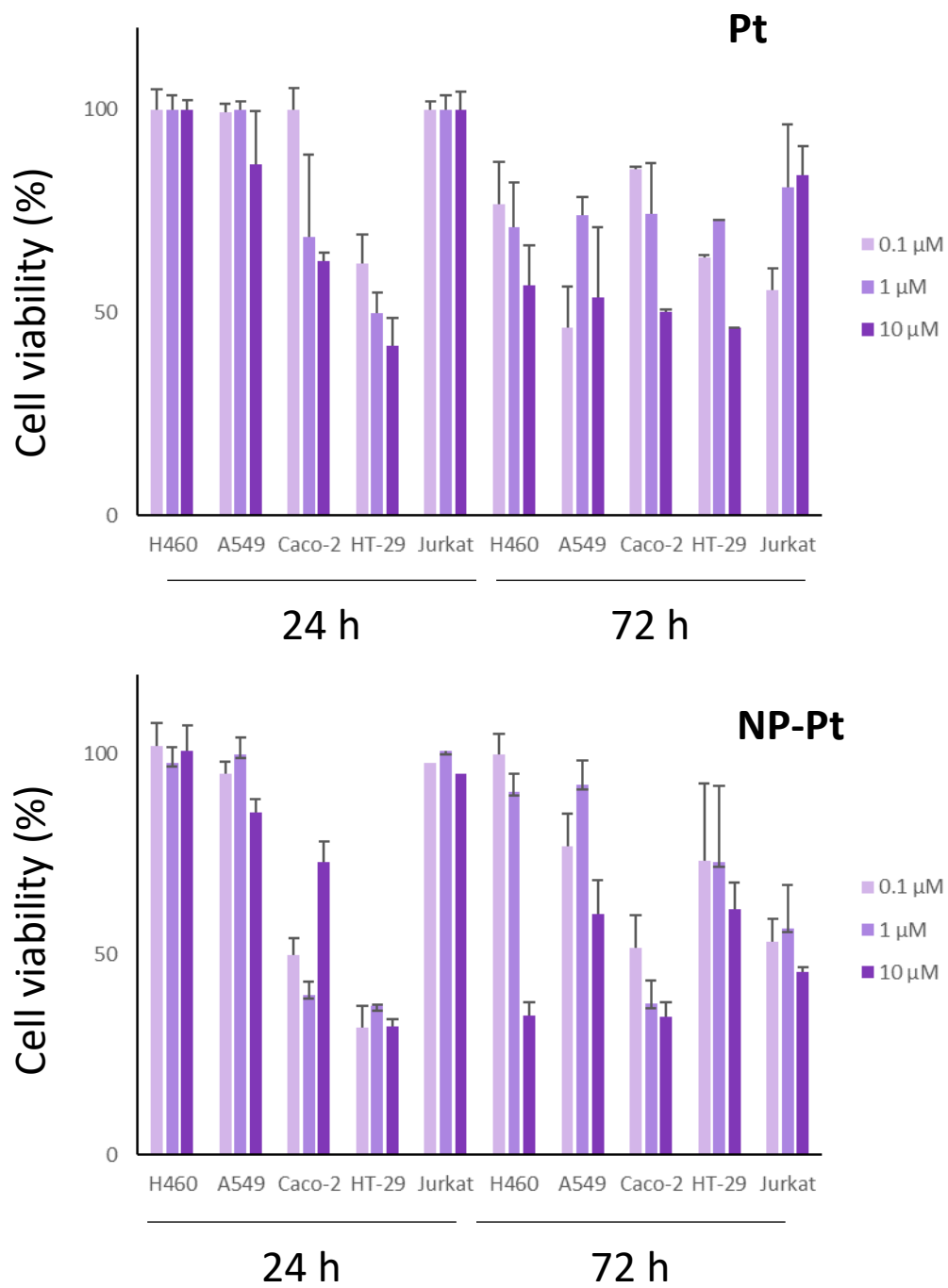
Figure S23: Representation of the data according to first-order kinetics,  $\ln(A_0/(A_0-x)) = kt$ .  $A_0$  is the absorbance of the complex bound to the nanoparticles at  $t = 0$ ;  $x$  is the absorbance of the complex released at time  $t$  in hours.



**Figure S24.** Intensity distribution of hydrodynamic diameters of NPs before coating (green), after coating (blue), and after functionalization with [Pt (GUDCA)<sub>2</sub>en complexes (red).

**Table S1.** Intensity mean hydrodynamic diameter (DH) and standard deviation (SD) of the nanoparticle suspensions obtained from dynamic light scattering (DLS) measurements.

Sample	DH (nm)	SD (nm)
IONP	75.9	43.0
IONP@BCP	89.9	38.1
IONP@BCP@ [Pt(GUDCA)en]	107.5	54.1



**Figure S25:** viability results of Pt compound and NP-Pt at 24 and 72 h of incubation in different concentrations (0.1, 1 and 10  $\mu\text{M}$ ).