

Supporting Information

Quaternary ammonium palmitoyl glycol chitosan (GCPQ) loaded with platinum-based anticancer agents – a novel polymer formulation for anticancer therapy

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1. ^1H NMR spectrum of GCPQ polymer

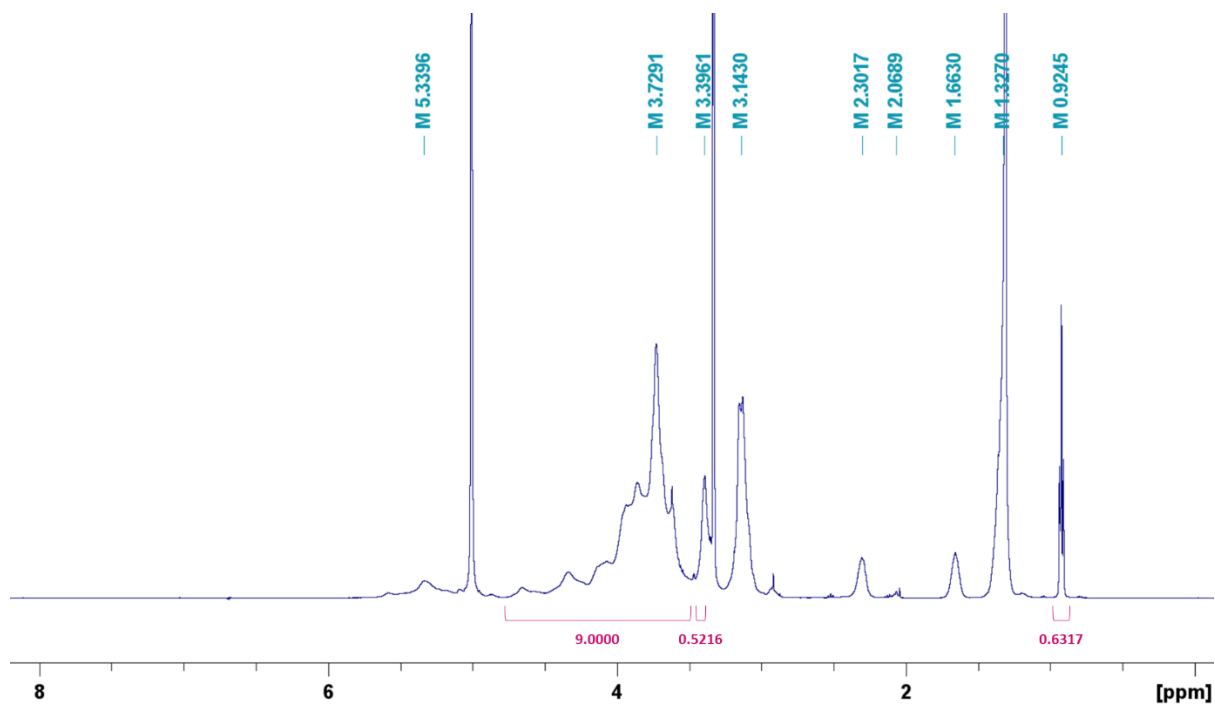


Figure S1. ^1H NMR spectrum of polymer **GCP21Q12** in MeOD + 5 μL DCl. The levels of palmitoylation and quaternisation were estimated by comparison of the integrals of palmitoyl methyl protons (0.92 ppm, 3H), quaternary ammonium protons (3.40 ppm, 9H, due to the partly overlapping MeOD signal, only half of the quaternary ammonium signal was integrated and accounted as 4.5 protons, provided a symmetrical resonance) and sugar backbone protons (3.54–4.75 ppm, 9H), respectively [1] .

2. Selected NMR spectra of conjugates

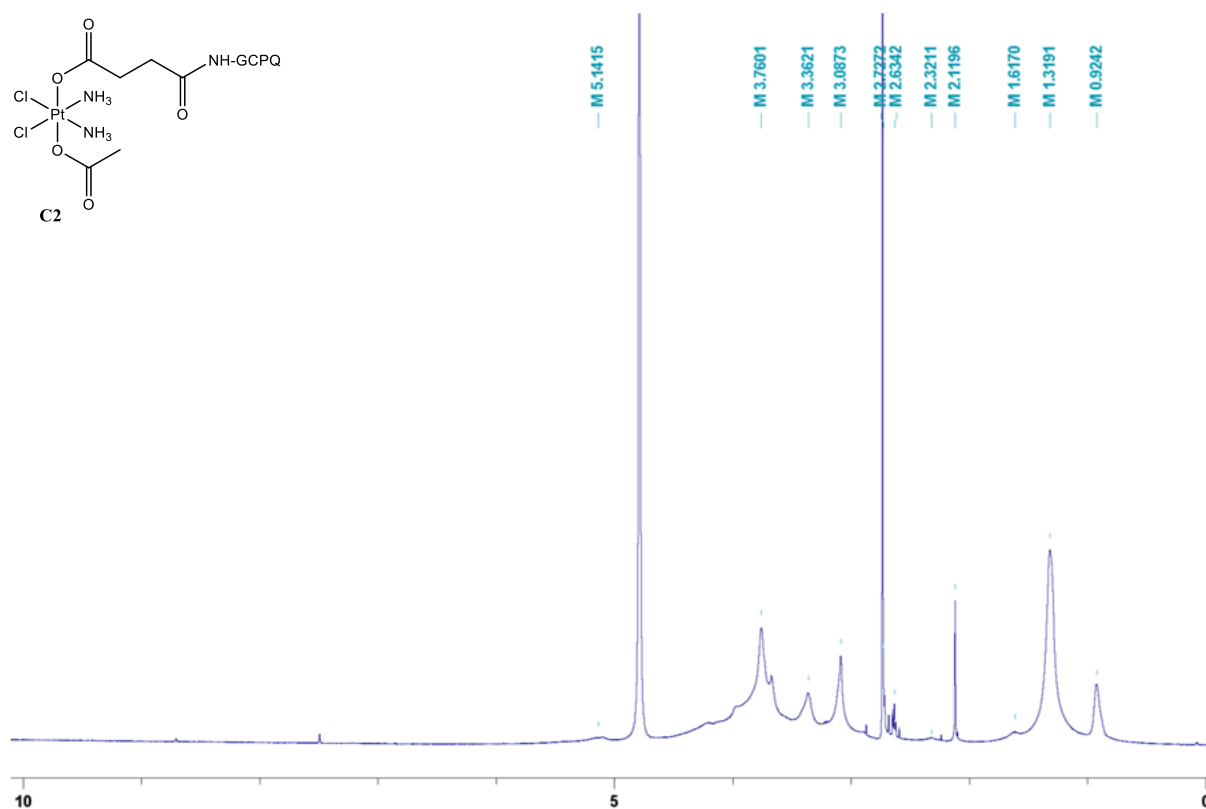


Figure S2. ¹H NMR spectrum of conjugate C2 in D₂O

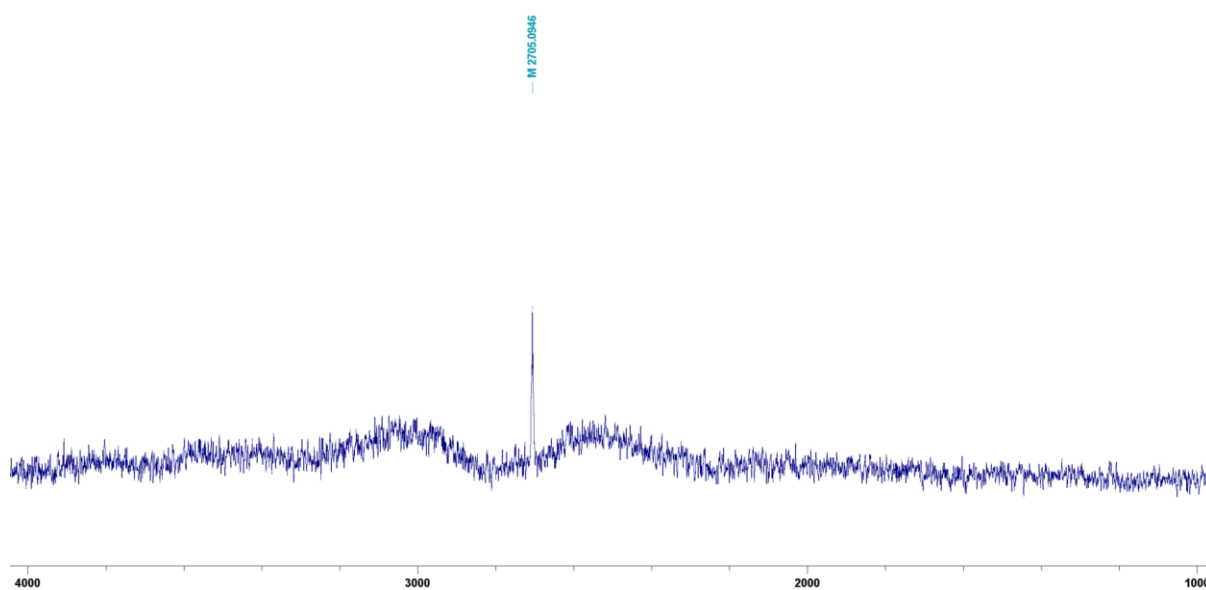


Figure S3. ¹⁹⁵Pt NMR spectrum of conjugate C2 in D₂O.

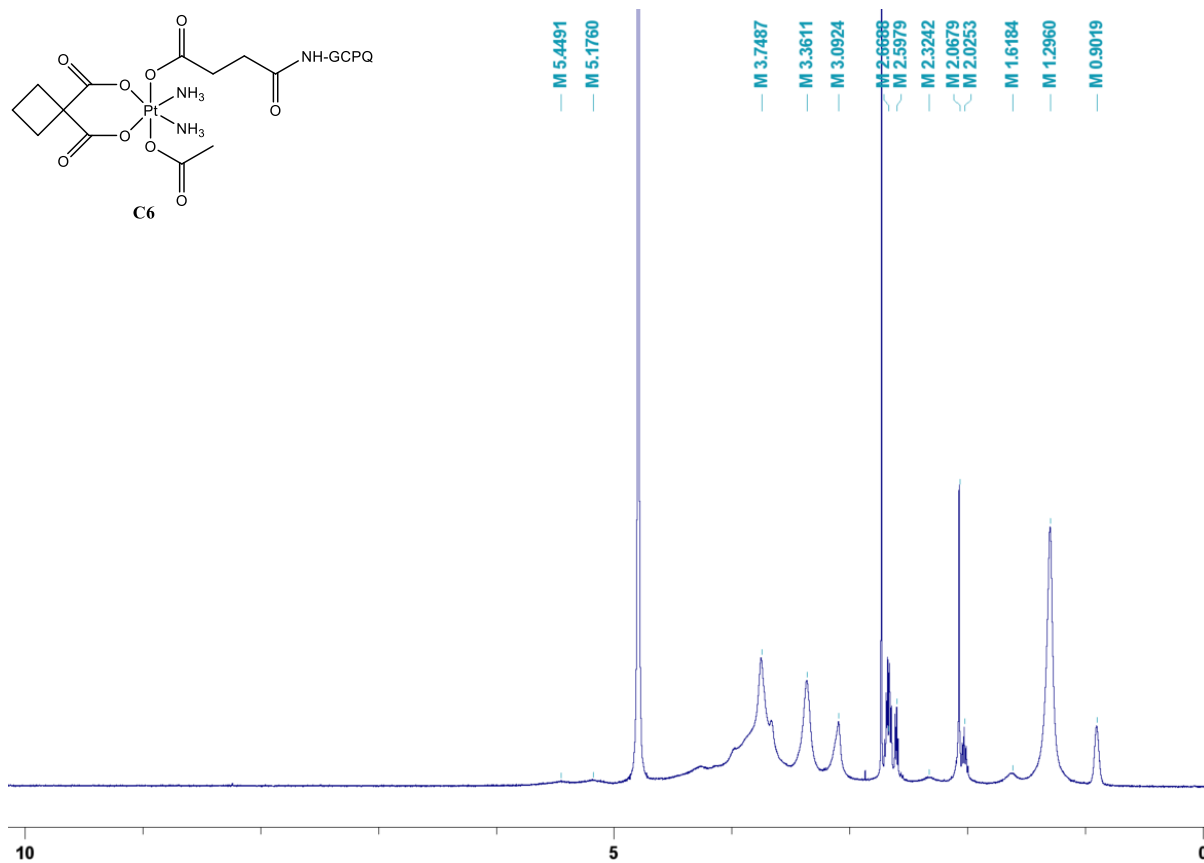


Figure S4. ¹H NMR spectrum of conjugate C6 in D₂O.

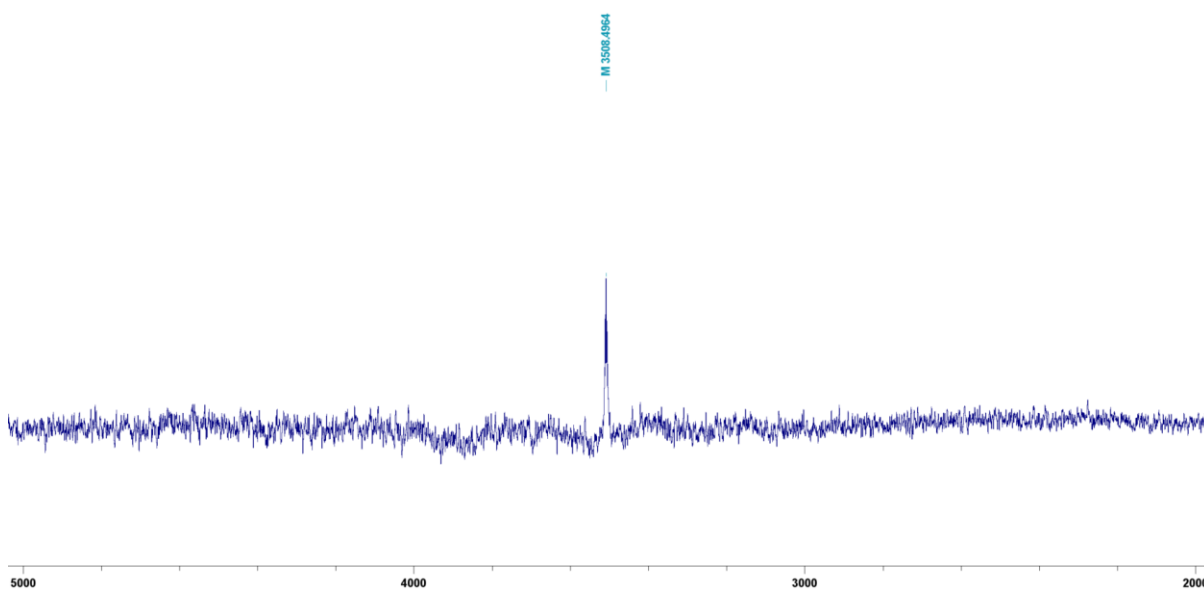


Figure S5. ¹⁹⁵Pt NMR spectrum of conjugate C6 in D₂O.

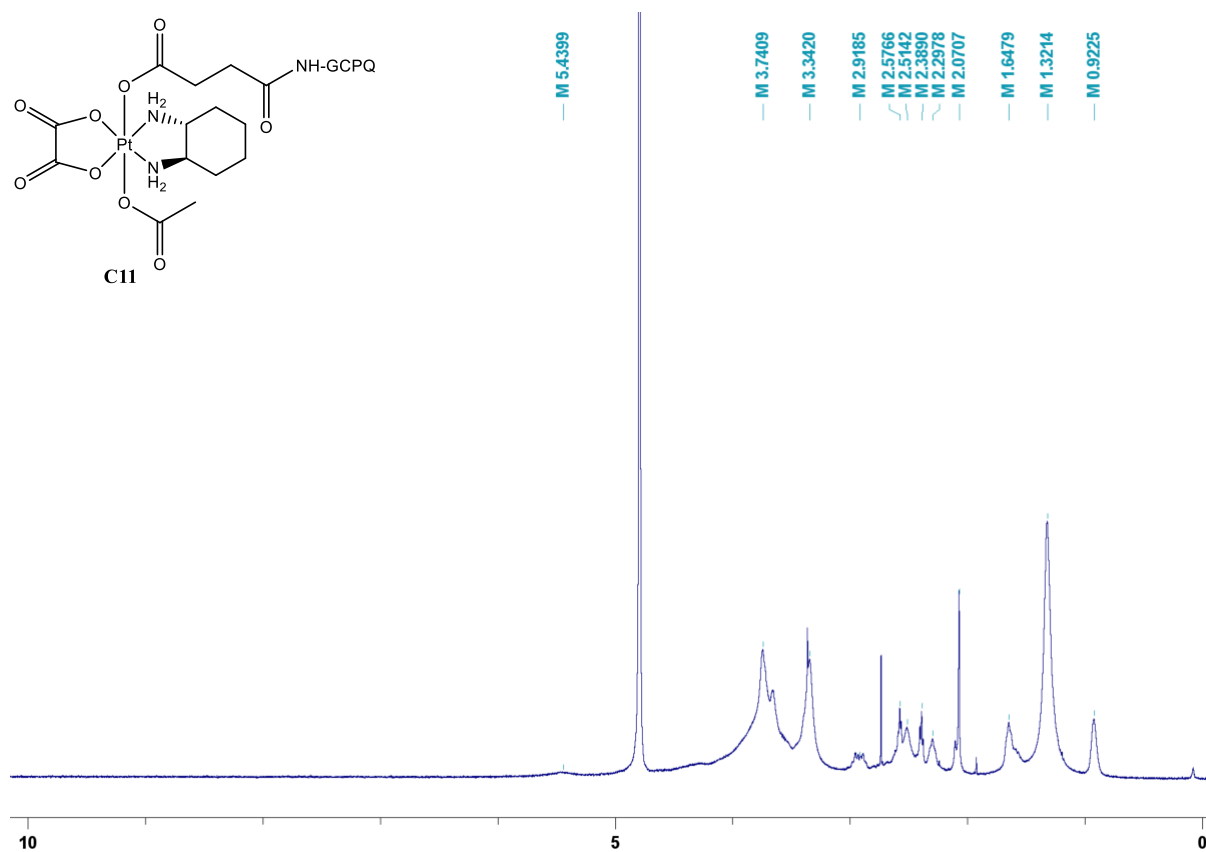


Figure S6. ^1H NMR spectrum of conjugate C11 in D_2O .

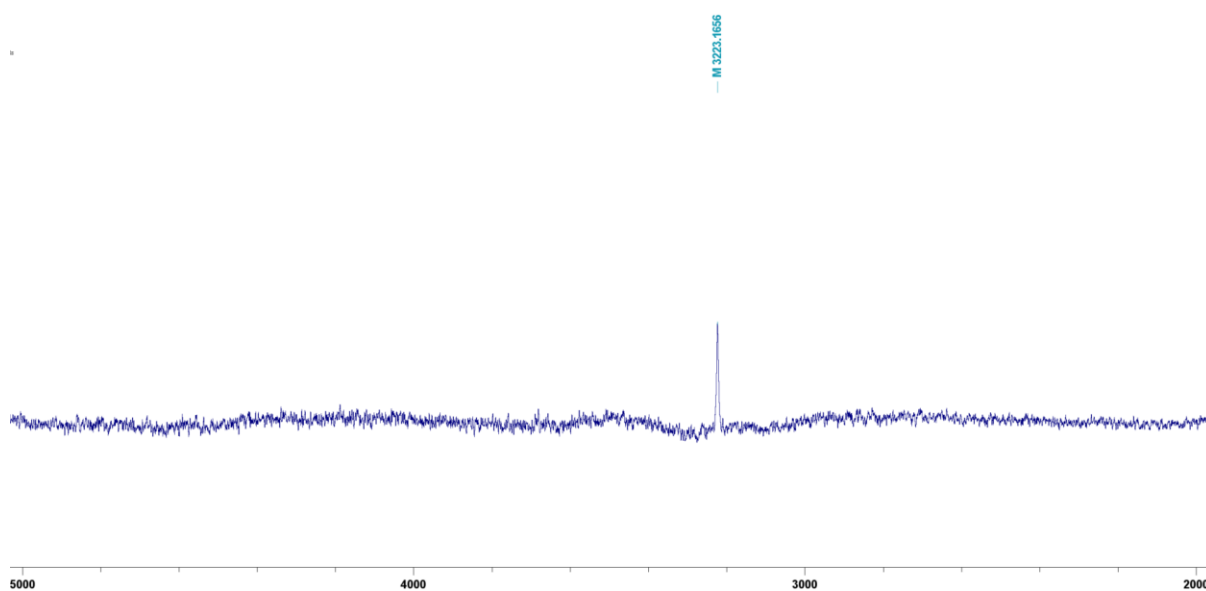


Figure S7. ^{195}Pt NMR spectrum of conjugate C11 in D_2O .

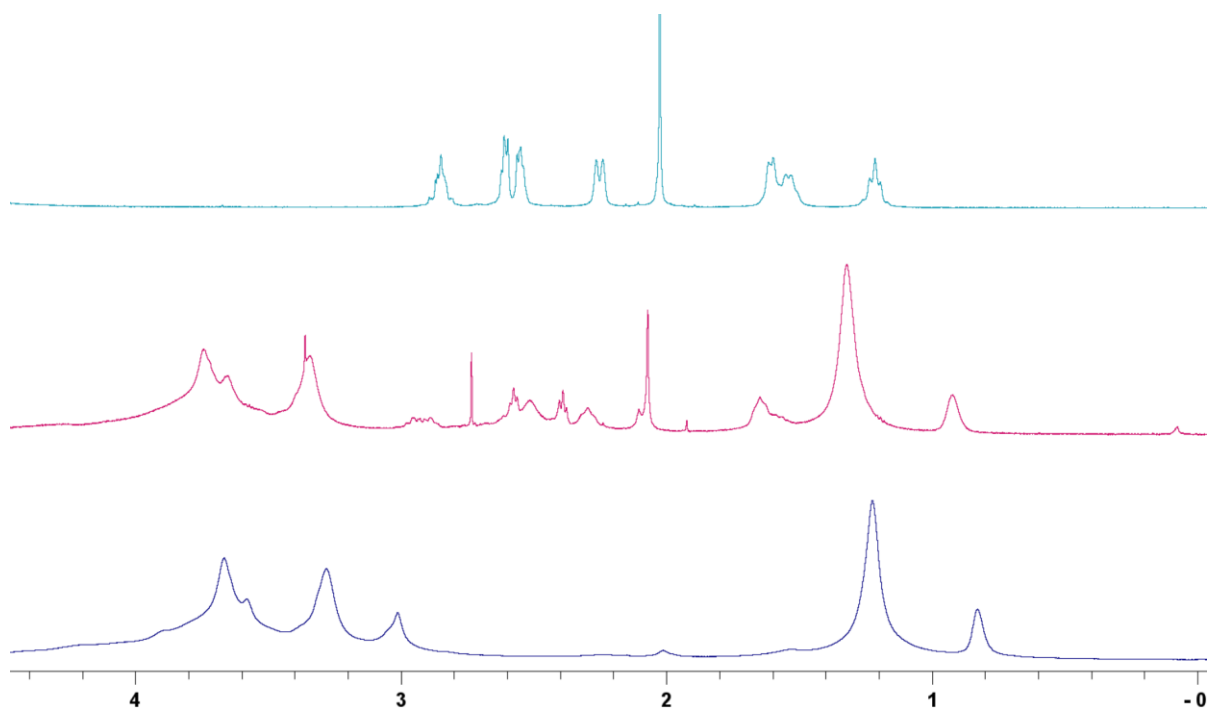


Figure S8. ¹H NMR spectra measured in D₂O of platinum(IV) complex **3** (above), conjugate **C11** (middle) and GCP22Q33 polymer (below).

3. Concentration-effect curves

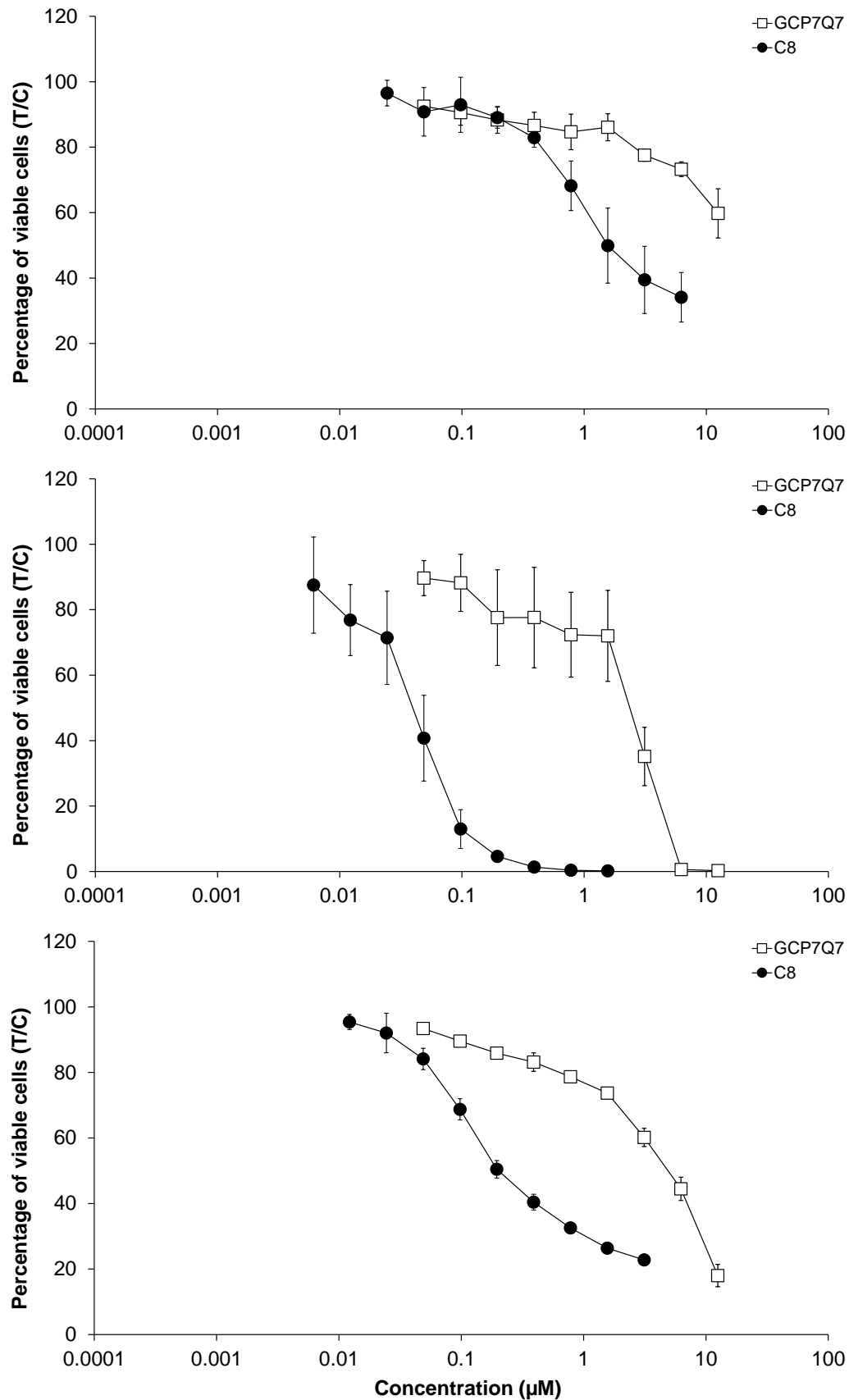


Figure S9. Concentration-effect curves of GCP7Q7 and C8 in A549 (top), CH1/PA-1 (middle) and SW480 (bottom) cells, obtained by MTT assays with 96 h exposure time. Values are means \pm standard deviations from at least three independent experiments.

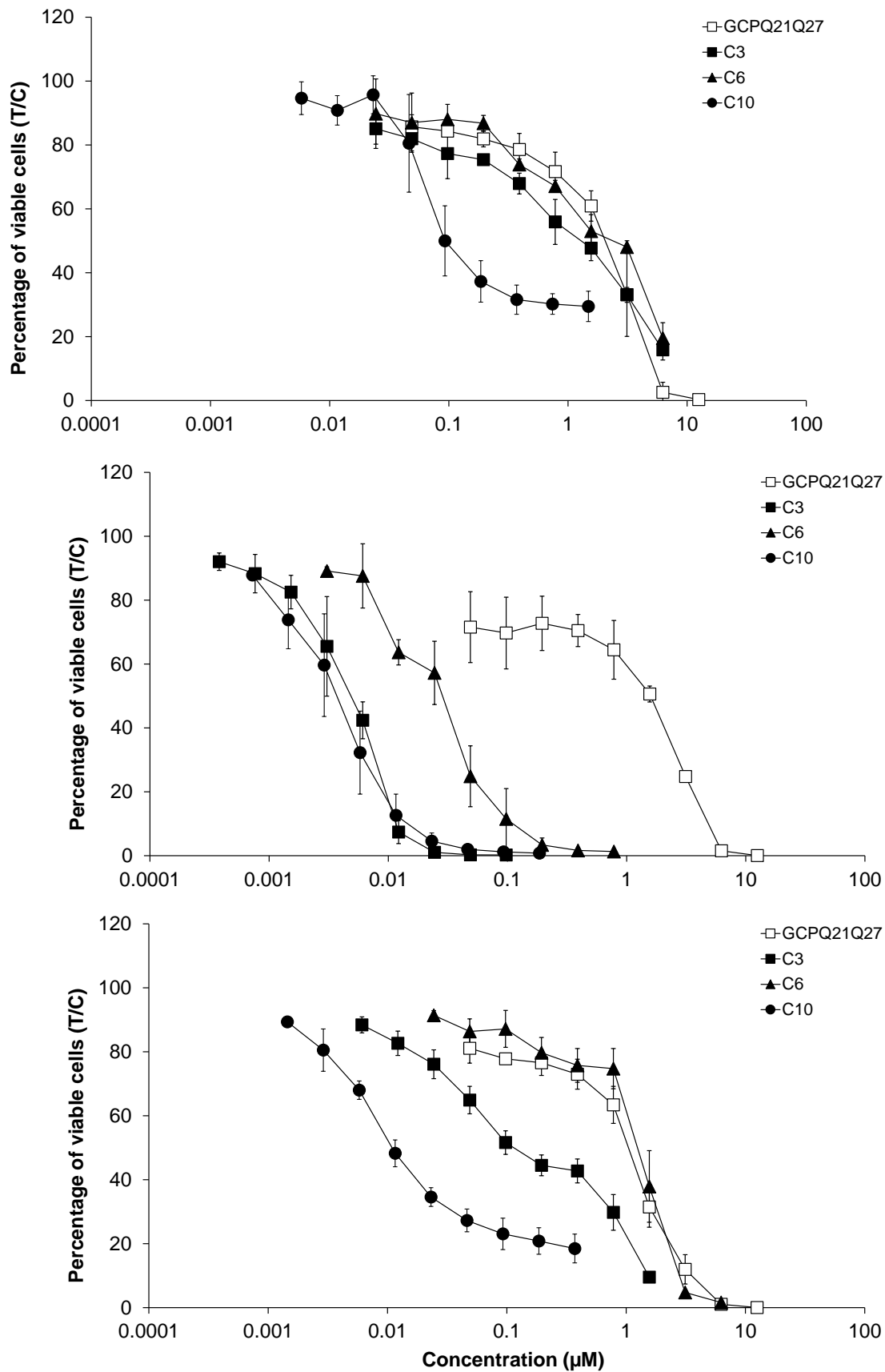


Figure S10. Concentration-effect curves of GCPQ21Q27, C3, C6 and C10 in A549 (top), CH1/PA-1 (middle) and SW480 (bottom) cells, obtained by MTT assays with 96 h exposure time. Values are means \pm standard deviations from at least three independent experiments.

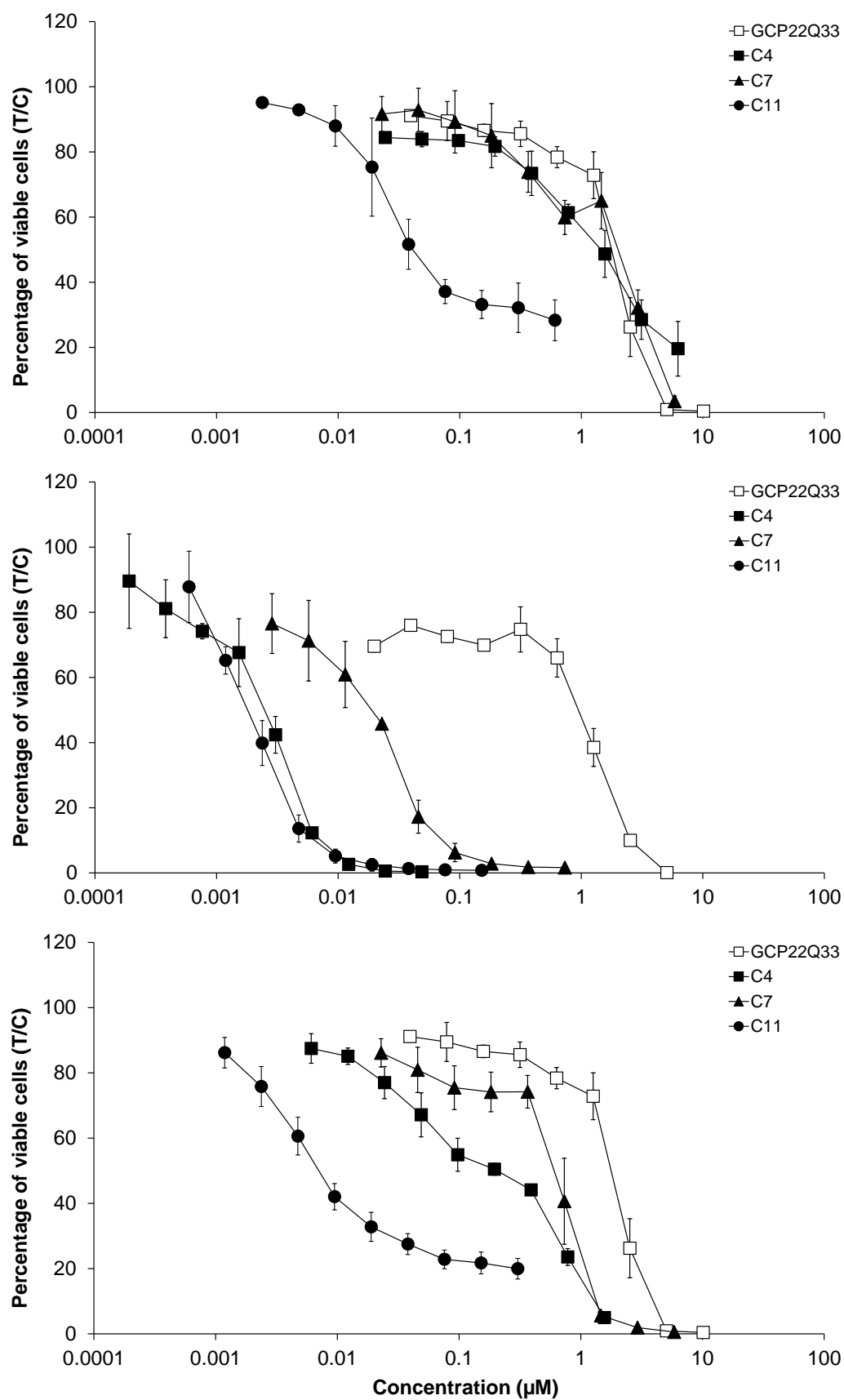


Figure S11. Concentration-effect curves of **GCP22Q33**, **C4**, **C7** and **C11** in A549 (top), CH1/PA-1 (middle) and SW480 (bottom) cells, obtained by MTT assays with 96 h exposure time. Values are means \pm standard deviations from at least three independent experiments.

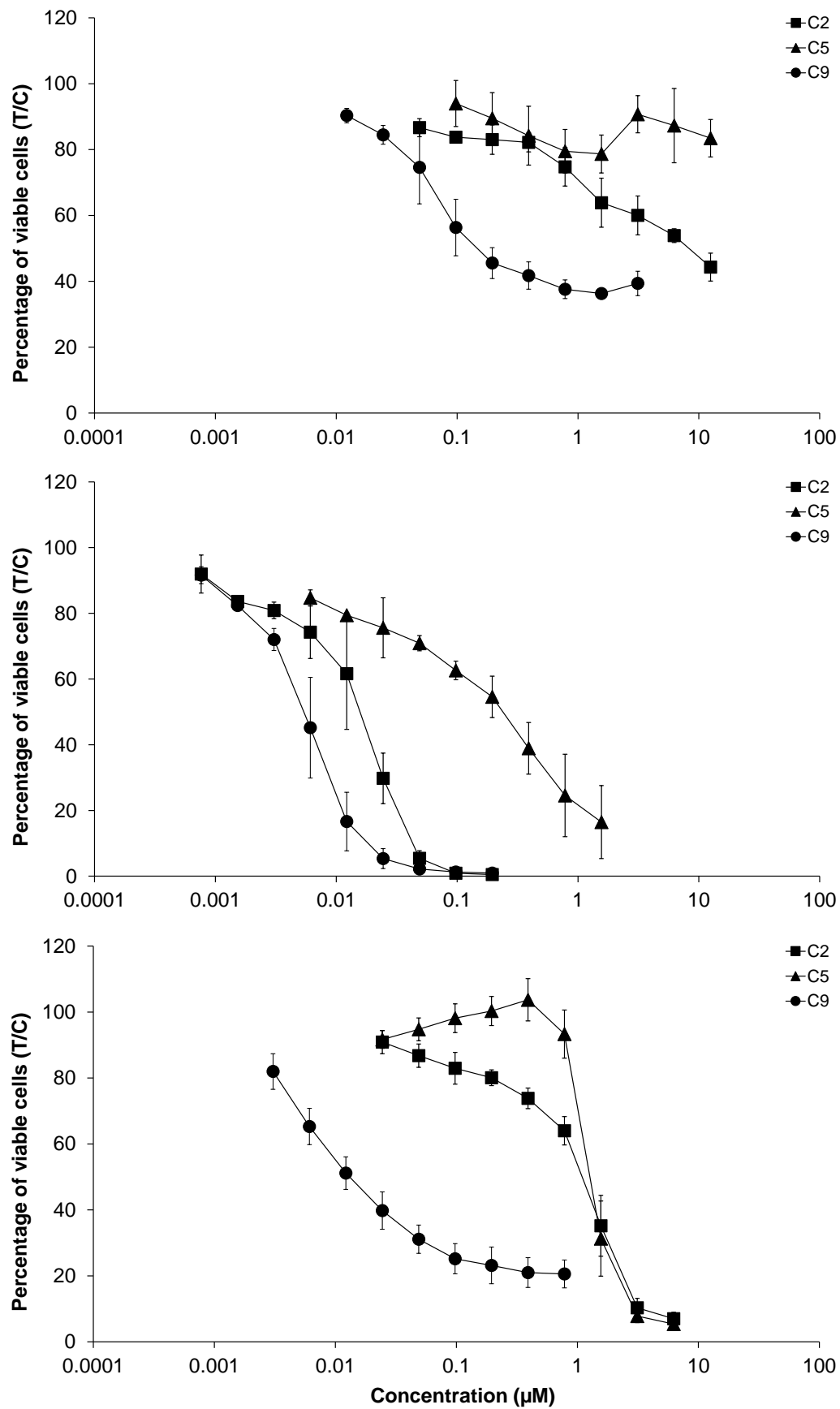


Figure S12. Concentration-effect curves of C2, C5 and C9 in A549 (top), CH1/PA-1 (middle) and SW480 (bottom) cells, obtained by MTT assays with 96 h exposure time. Values are means \pm standard deviations from at least three independent experiments.

4. Solubility data

Table S1. Overview of the water solubility of conjugates **C1-C11** measured by visual judgement in Milli-Q water at room temperature.

Sample	Pt(IV)	GCPQ	Water solubility [mg/mL]
C1	1	GCP7Q7	~1
C2	1	GCP21Q12	~3
C3	1	GCP21Q27	~4
C4	1	GCP22Q33	~5.5
C5	2	GCP21Q12	~3
C6	2	GCP21Q27	~5
C7	2	GCP22Q33	~6
C8	3	GCP7Q7	~2
C9	3	GCP21Q12	~4
C10	3	GCP21Q27	~5
C11	3	GCP22Q33	~6.5

5. References

1. Uchegbu, I.F.; Sadiq, L.; Arastoo, M.; Gray, A.I.; Wang, W.; Waigh, R.D.; Schätzlein, A.G. Quaternary Ammonium Palmitoyl Glycol Chitosan-a New Polysoap for Drug Delivery. *Int J Pharm* **2001**, *224*, 185–199, doi:10.1016/s0378-5173(01)00763-3.