SUPPLEMENTARY FILE

Synthesis of the First 2-Hydroxyanthraquinone Substituted Cyclotriphosphazenes and Their Cytotoxic Properties

Gönül Yenilmez Çiftçi*[a], Nagihan Bayık [a], Esra Tanrıverdi Eçik[b], Elif Şenkuytu[b], Masuk Aksahin[c], Tuba Yıldırım[d]

*Correspondence:yenilmez@gtu.edu.tr

[a]Department of Chemistry, Faculty of Sciences, Gebze Technical University, Gebze, Kocaeli, Turkey

[b]Department of Chemistry, Faculty of Sciences, Ataturk University, 25240, Erzurum, Turkey

[c]Department of Biotechnology, Graduate School of Natural and Applied Sciences, Amasya University, 05100, Amasya, Turkey

[d]Department of Biology, Faculty of Arts and Sciences, Amasya University, 05100, Amasya, Turkey

* Corresponding author

Phone: +90 262 6053011 Fax: +90 262 6053005

E-mail: yenilmez@gtu.edu.tr

CONTENTS

Contents of Figures

Contents of Tables

COMPOUND 6

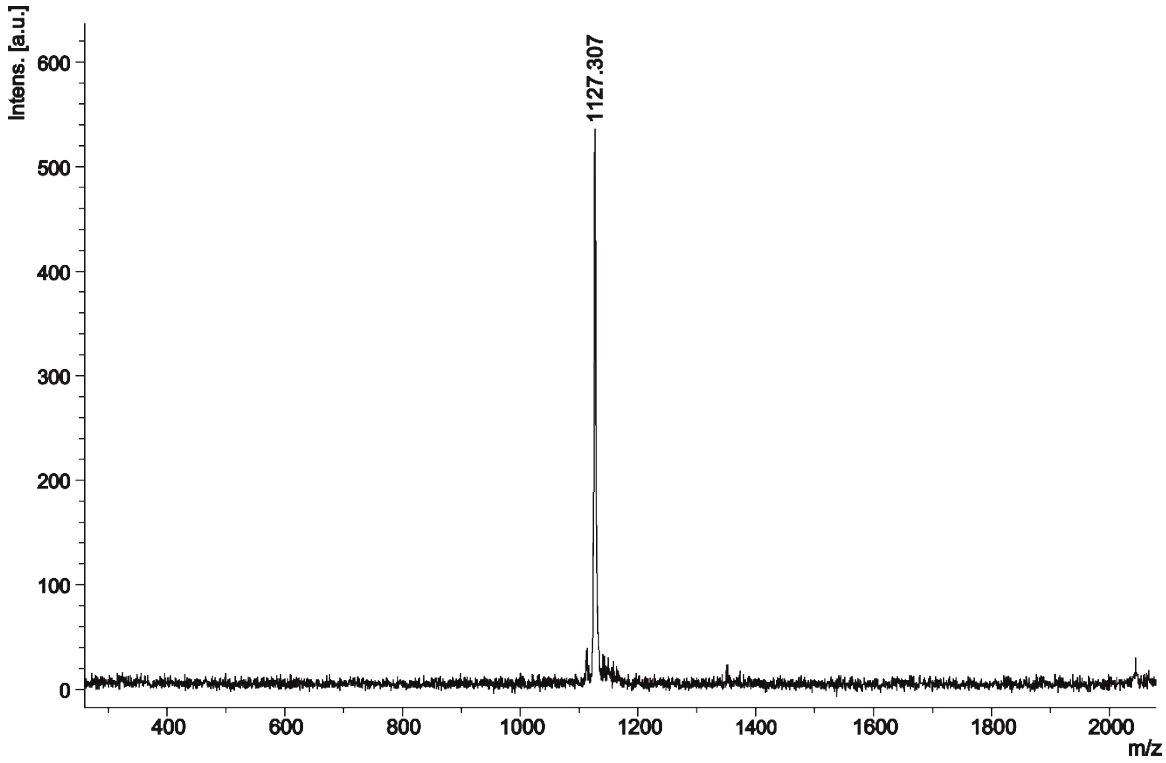


Figure S1. MALDI-MS spectra of Compound 6

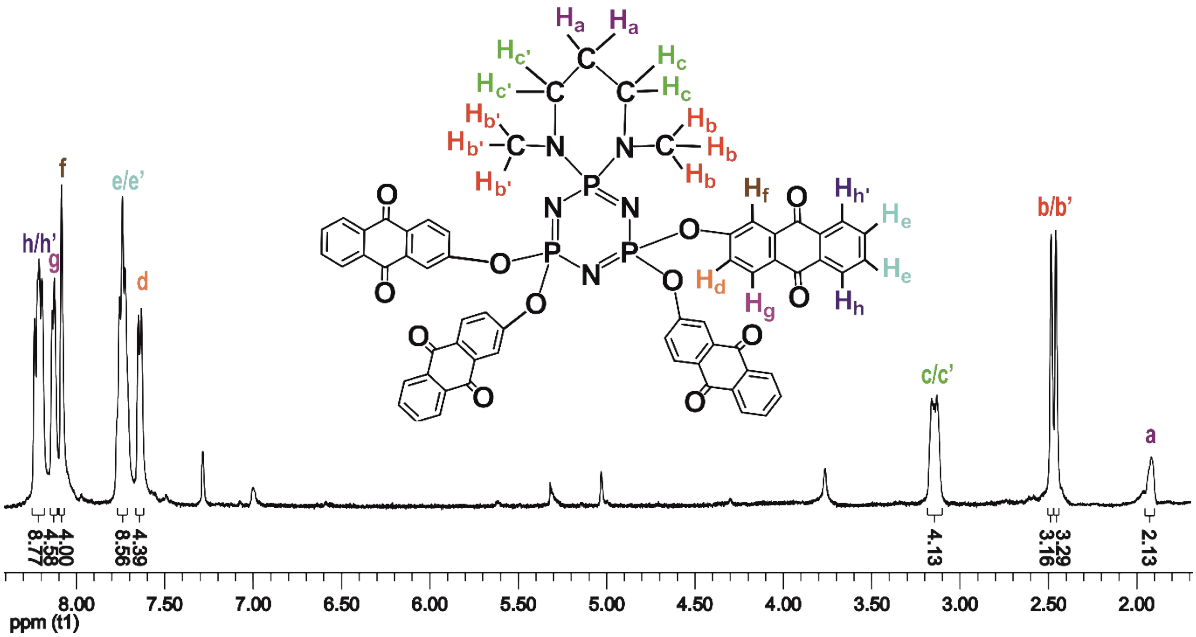


Figure S2. ^{1}H NMR spectra of Compound 6 in $CDCl_3$

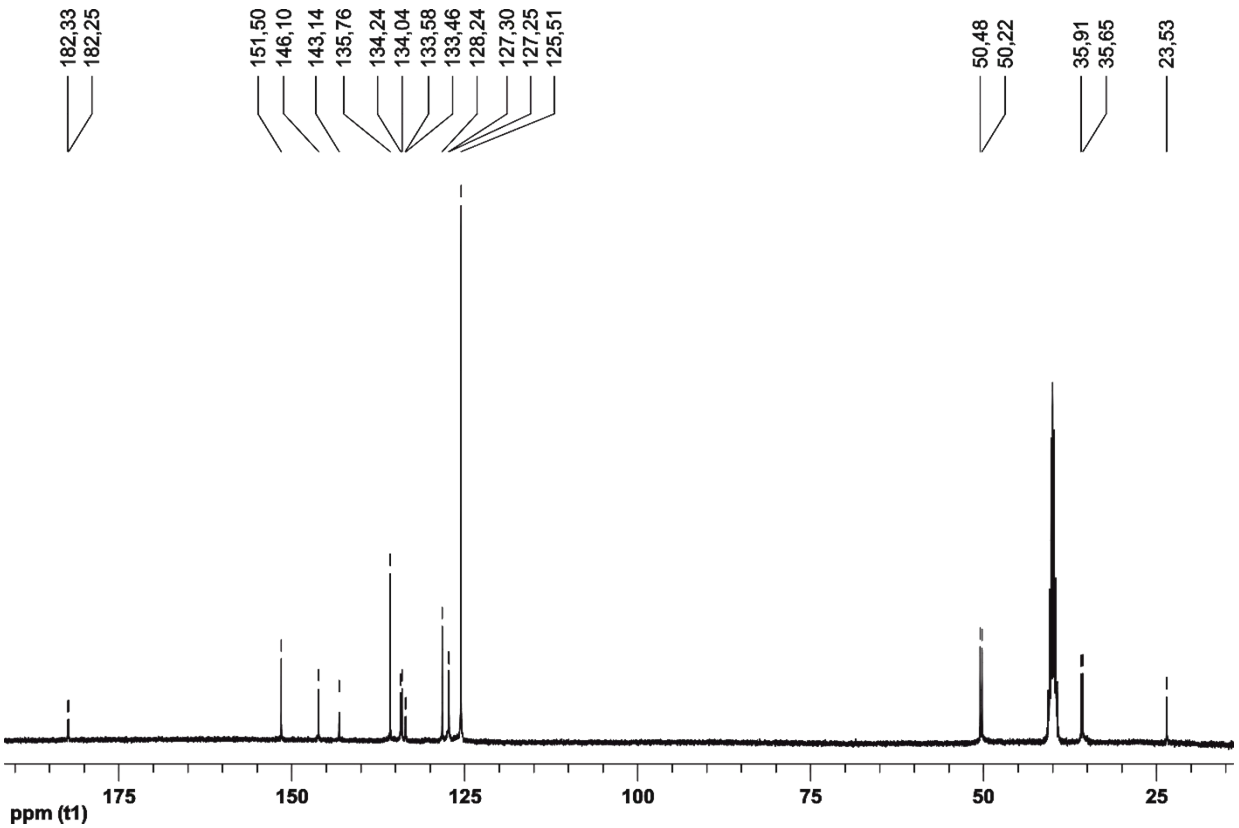


Figure S3. ^{13}C NMR spectra of Compound 6 in DMSO-d_6

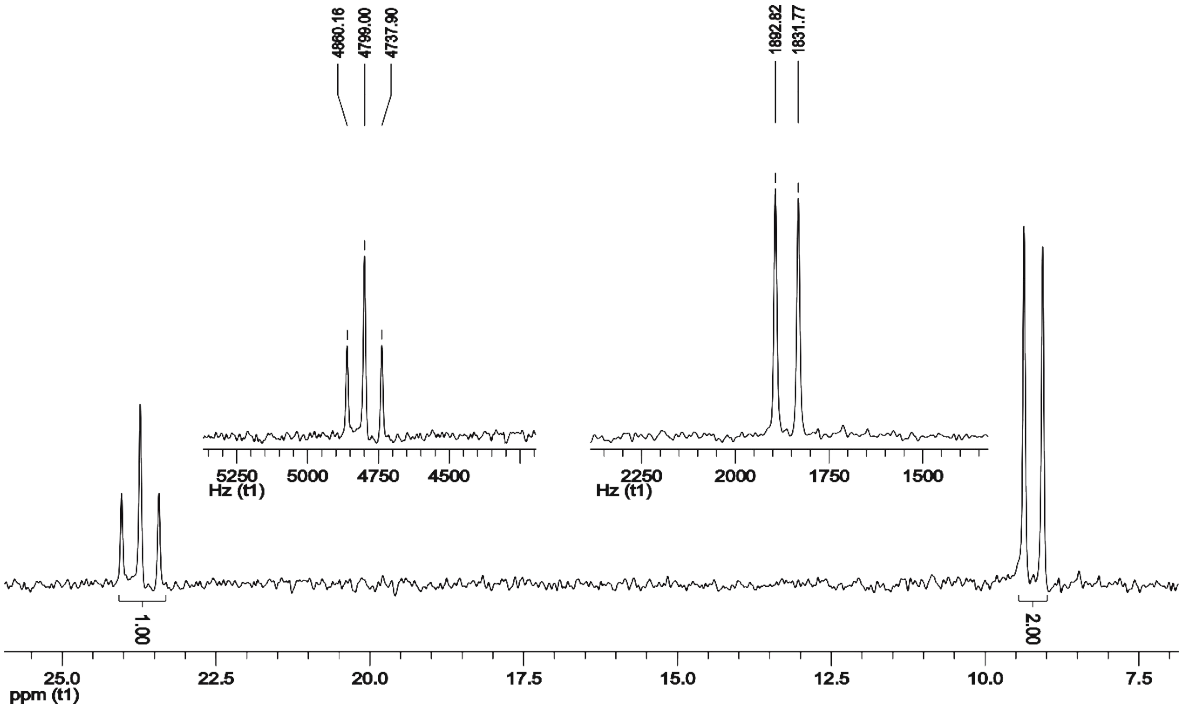


Figure S4. ^{31}P NMR decoupled spectra of Compound 6 in $CDCl_3$

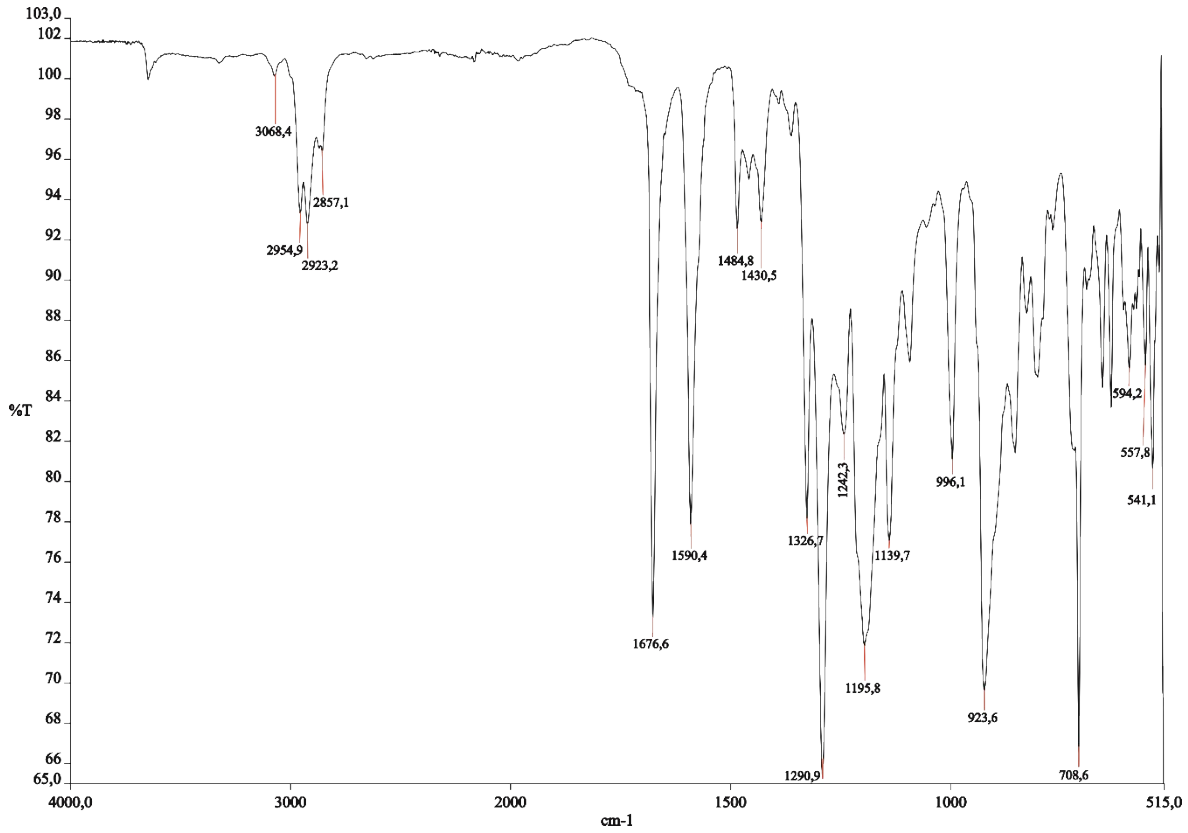


Figure S5. FT-IR spectra of Compound 6

COMPOUND 7

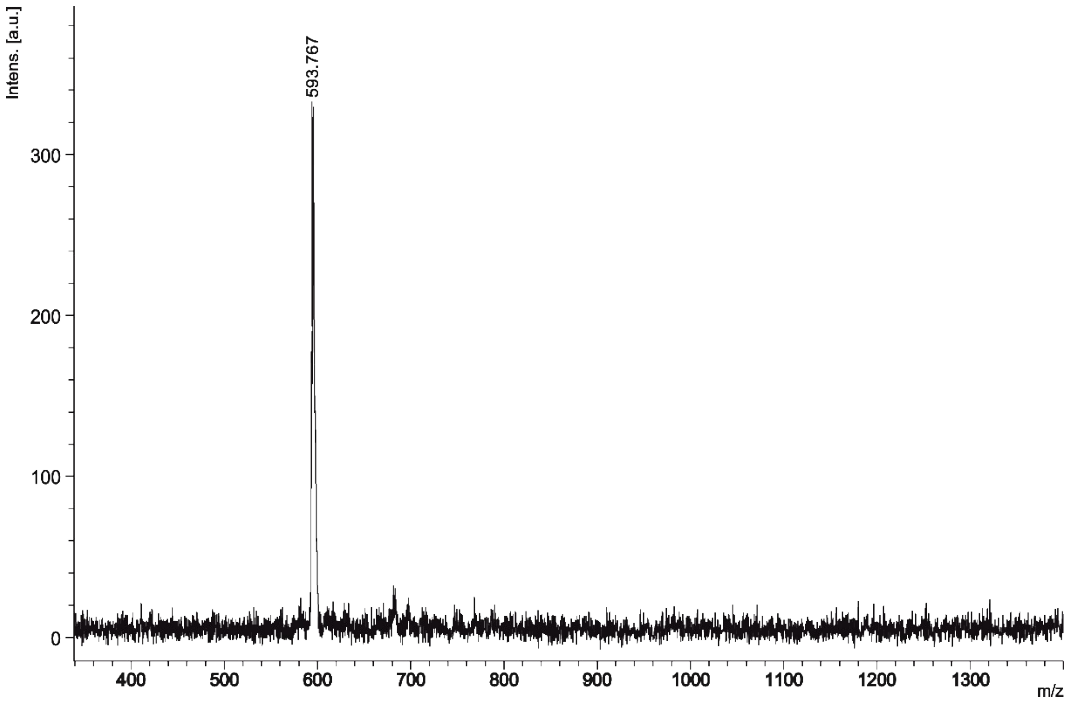


Figure S6. MALDI-MS spectra of Compound 7

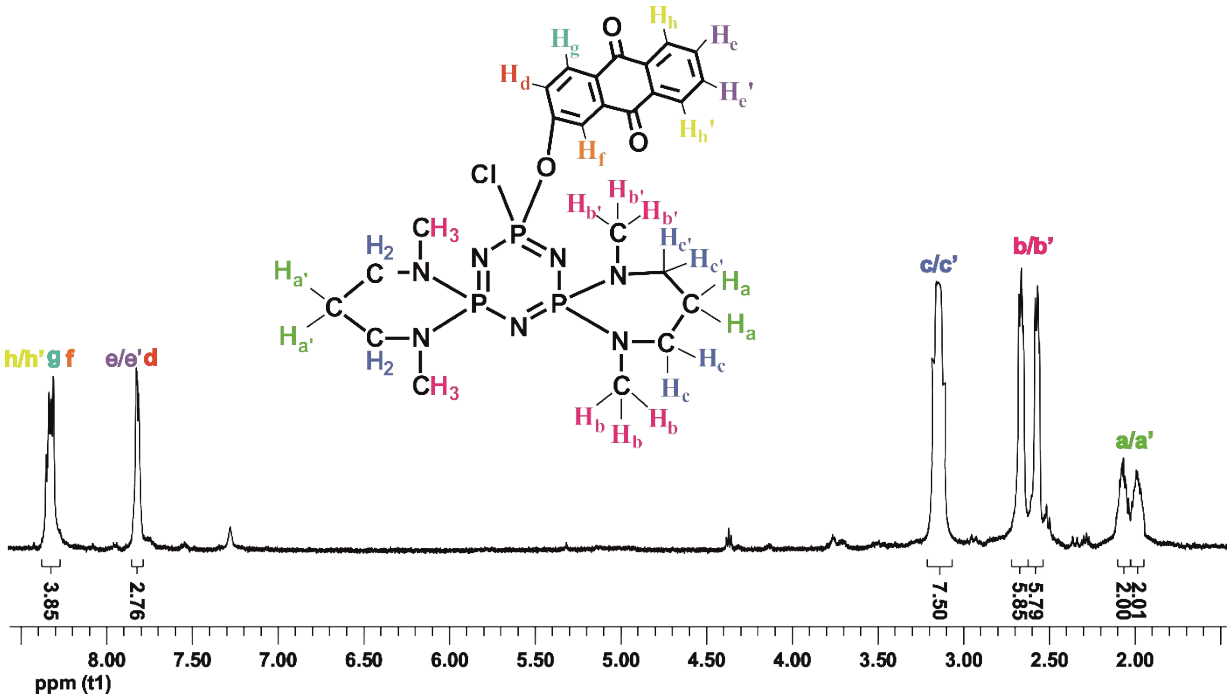


Figure S7. ^{1}H NMR spectra of Compound 7 in $CDCl_3$

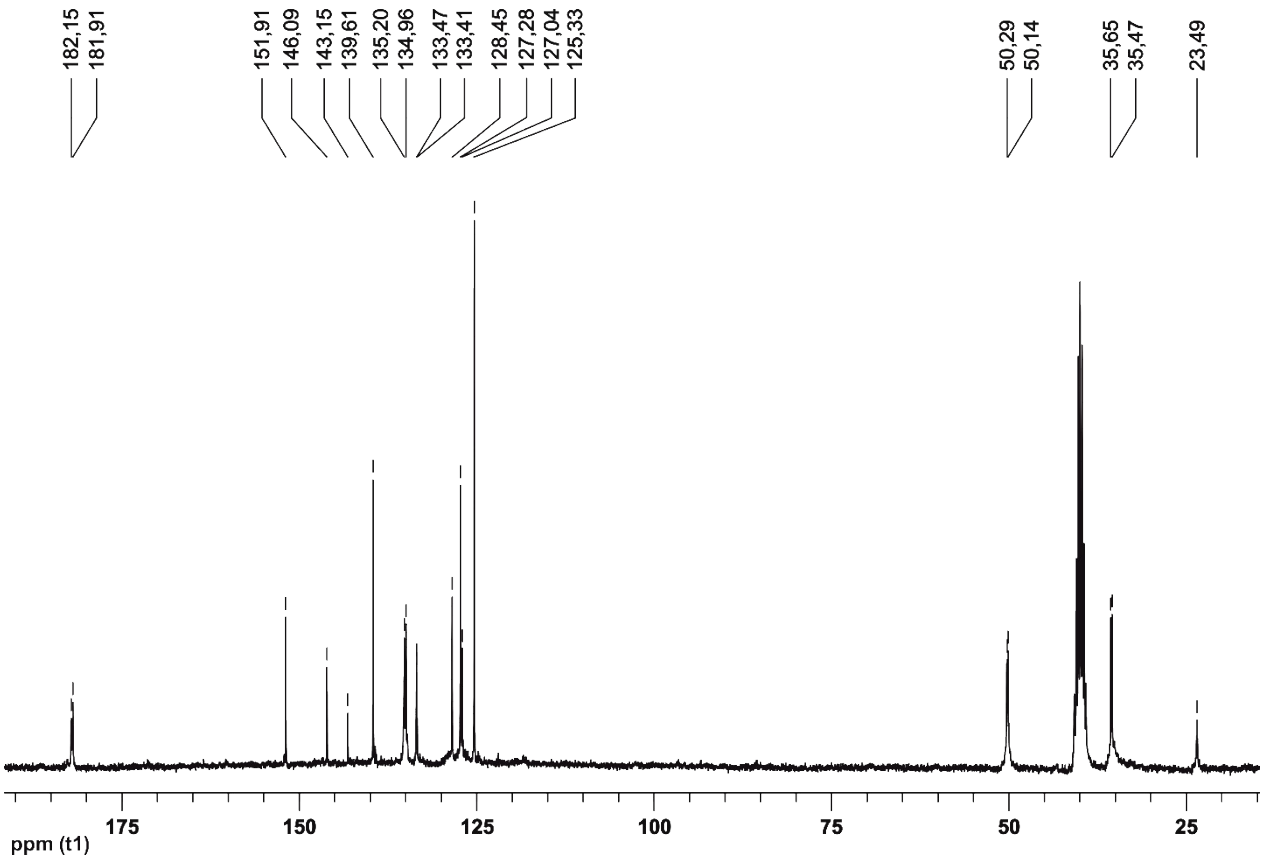


Figure S8. ^{13}C NMR spectra of Compound 7 in DMSO-d_6

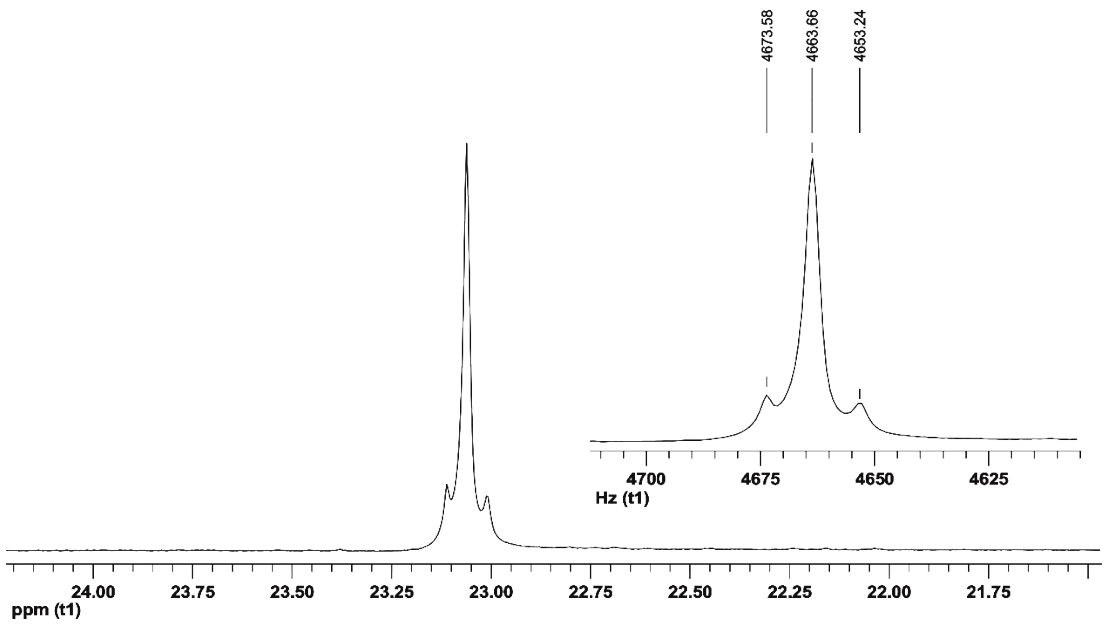


Figure S9. ^{31}P NMR decoupled spectra of Compound 7 in $CDCl_3$

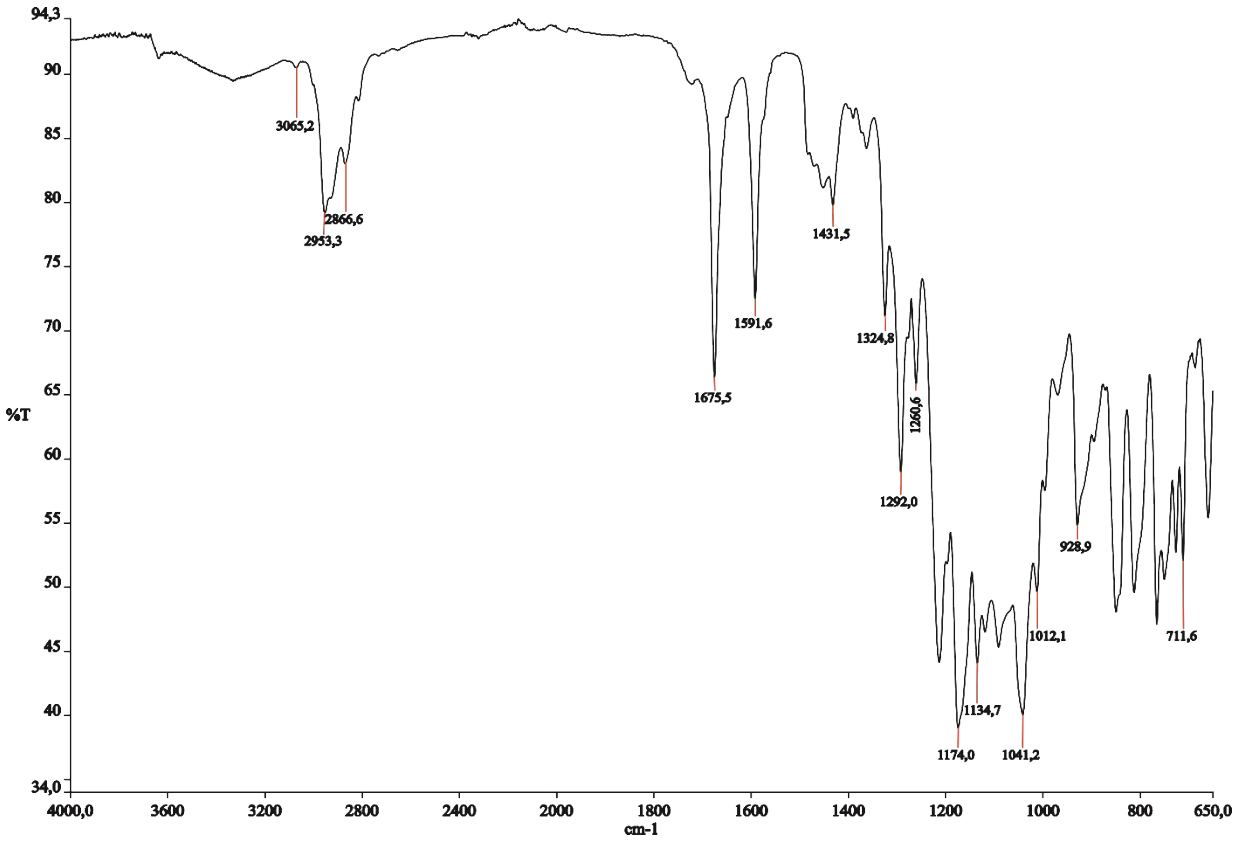


Figure S10. FT-IR spectra of Compound 7

COMPOUND 8

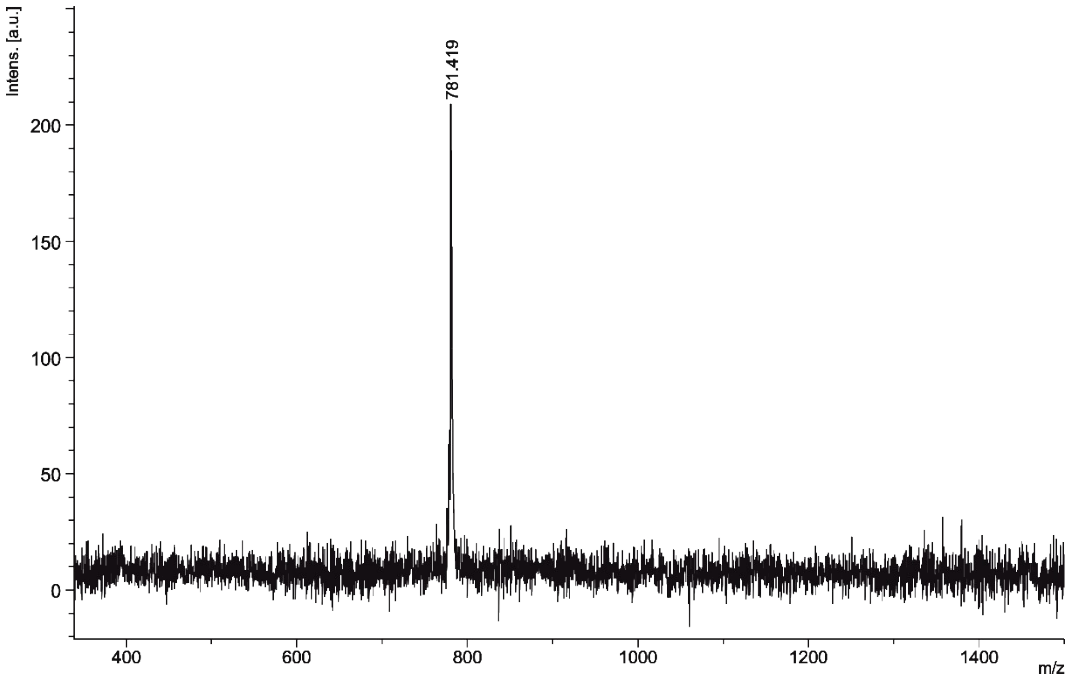


Figure S11. MALDI-MS spectra of Compound 8

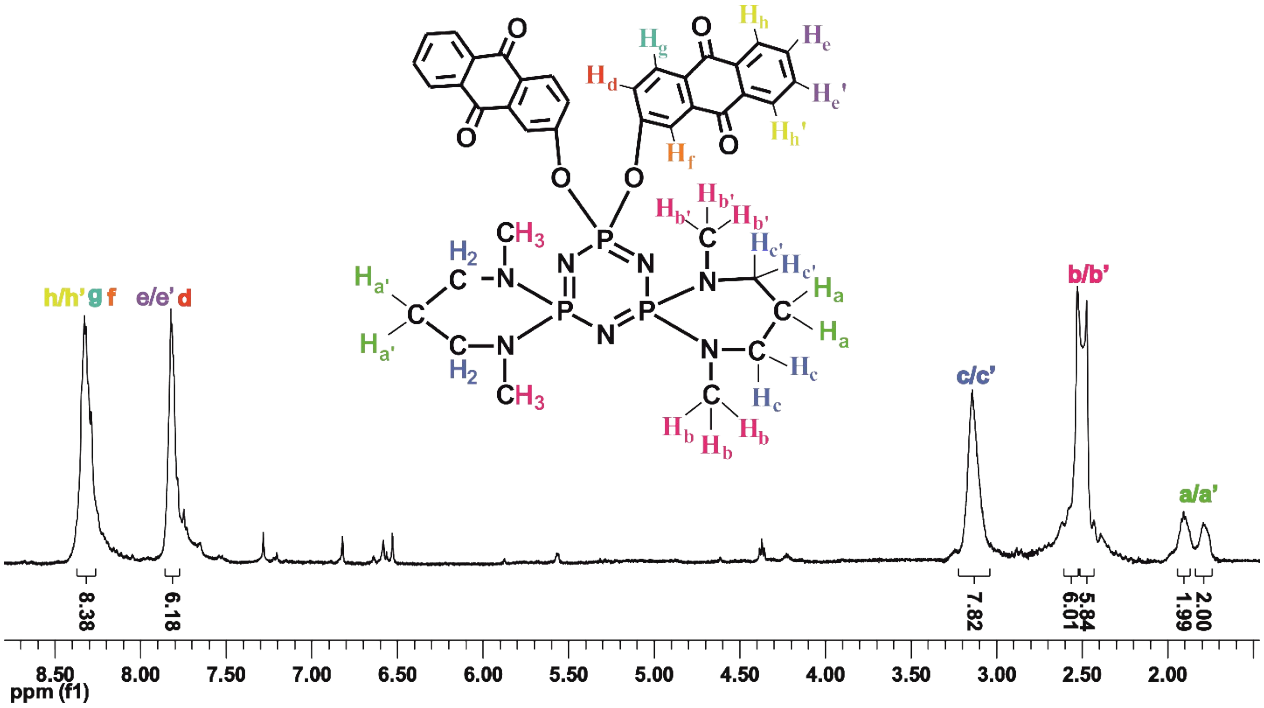


Figure S12. ^{1}H NMR spectra of Compound 8 in $CDCl_3$

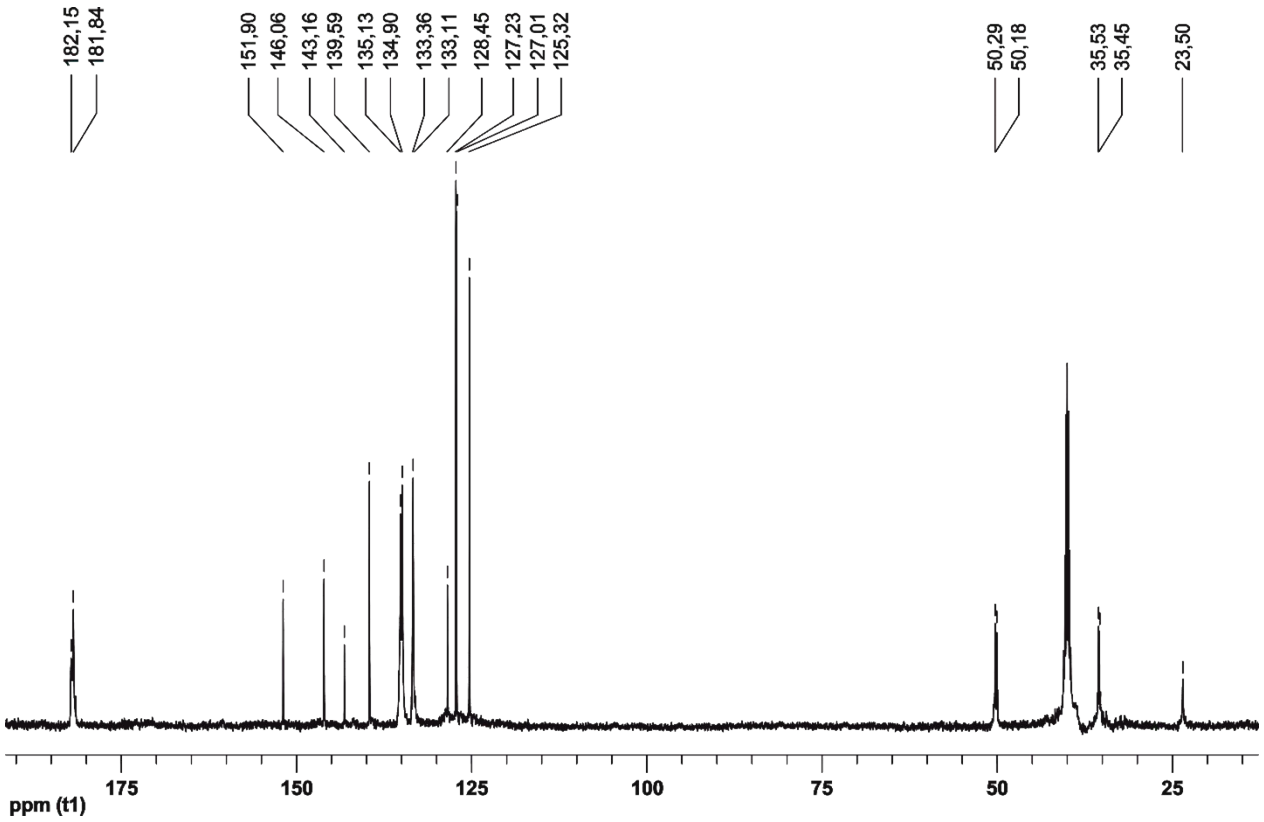


Figure S13. ^{13}C NMR spectra of Compound 8 in DMSO-d_6

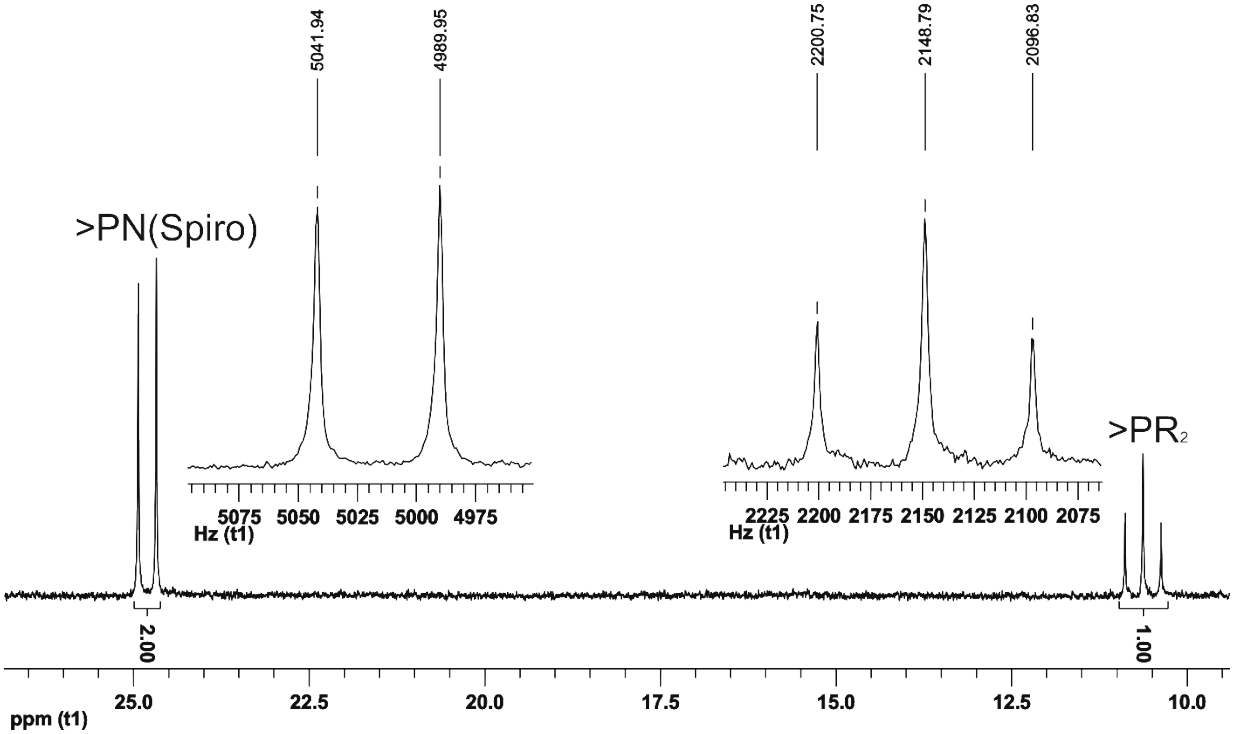


Figure S14. ^{31}P NMR decoupled spectra of Compound 8 in $CDCl_3$

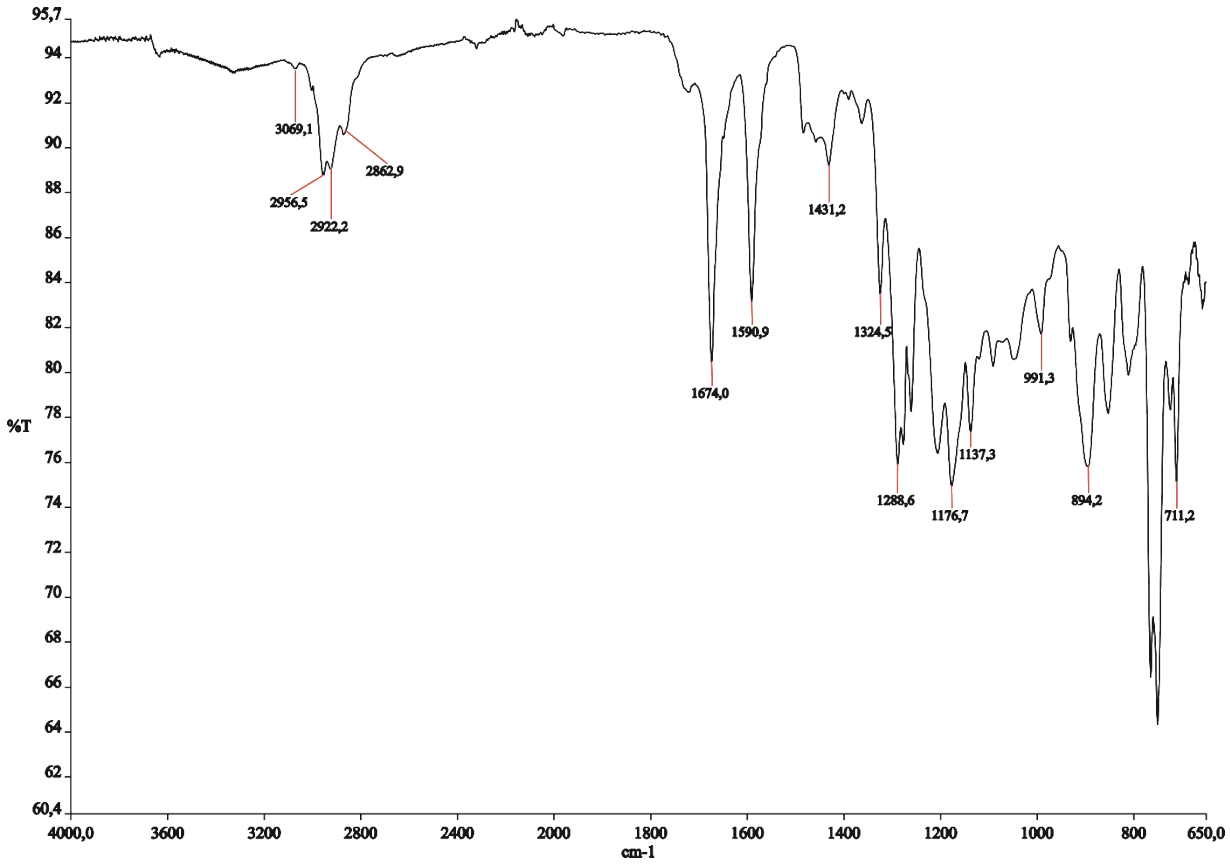


Figure S15. FT-IR spectra of Compound 8

COMPOUND 9

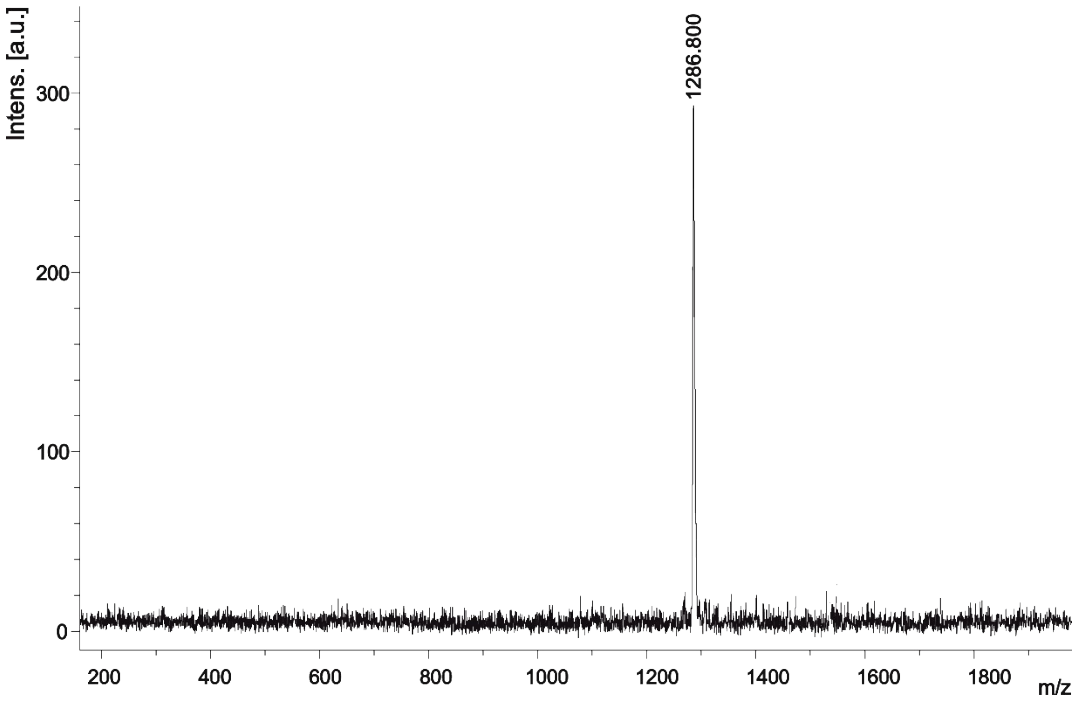


Figure S16. MALDI-MS spectra of Compound 9

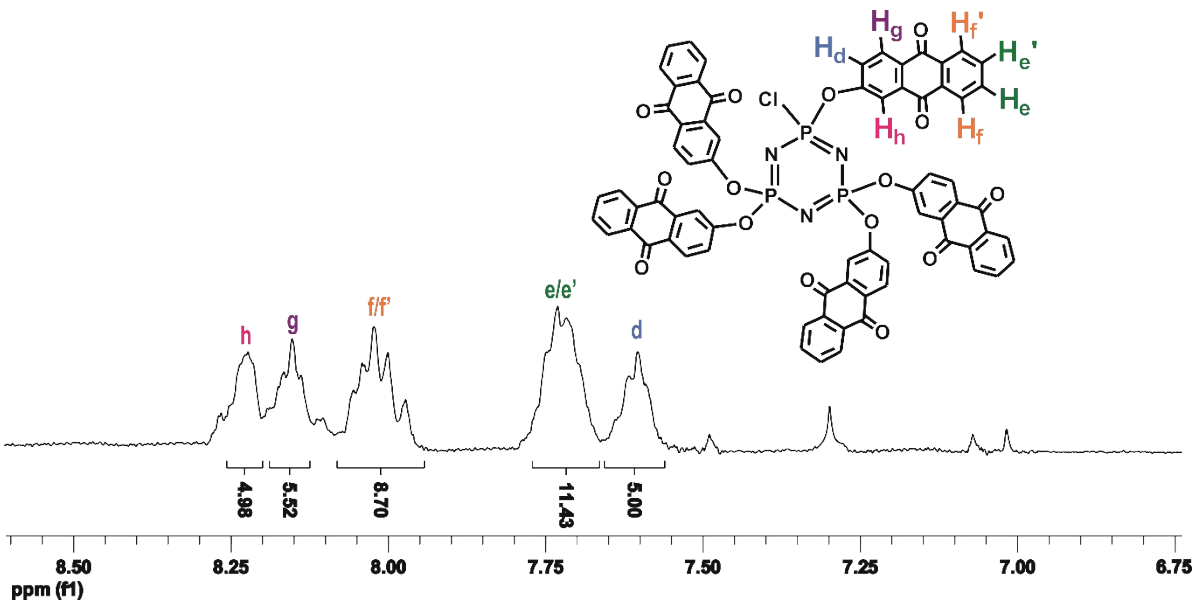


Figure S17. ^{1}H NMR spectra of Compound 9 in $CDCl_3$

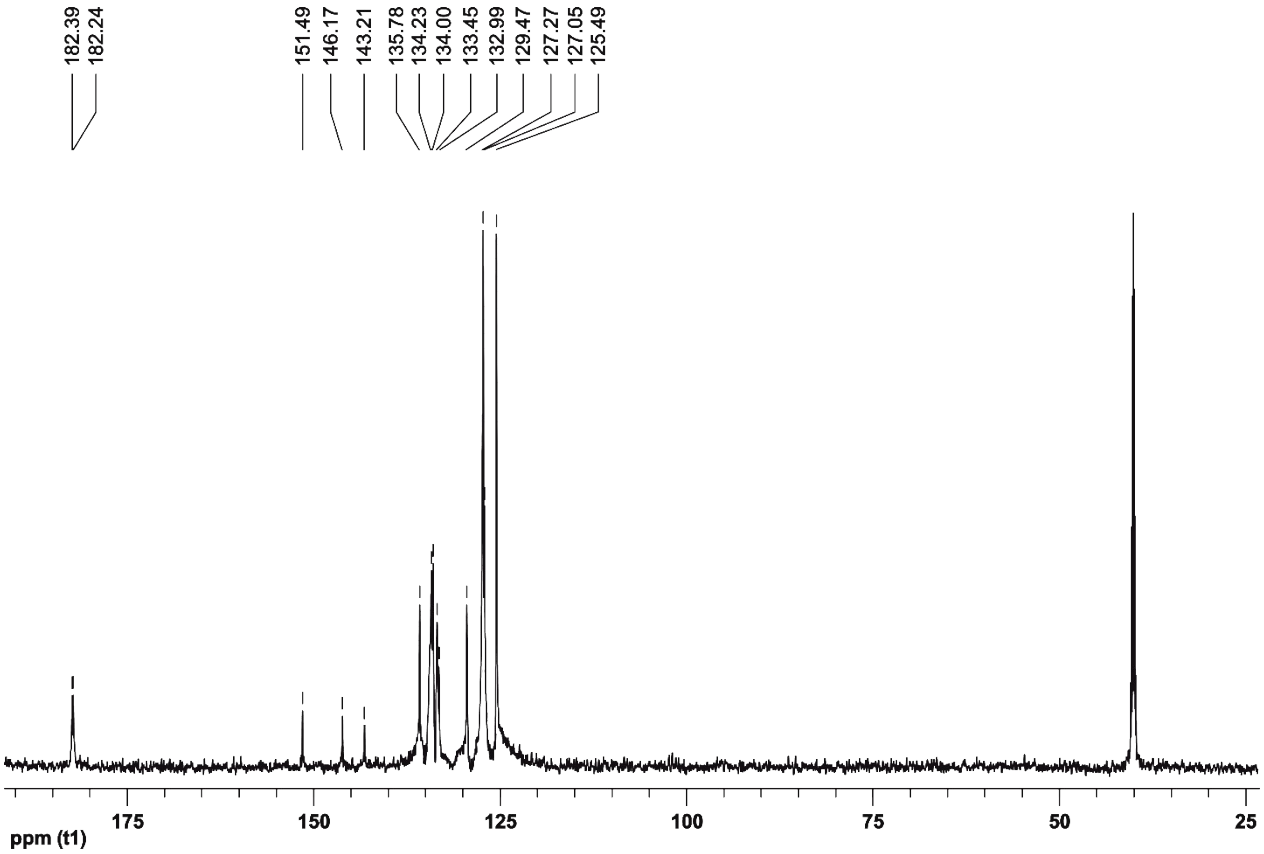


Figure S18. ^{13}C NMR spectra of Compound 9 in DMSO-d_6

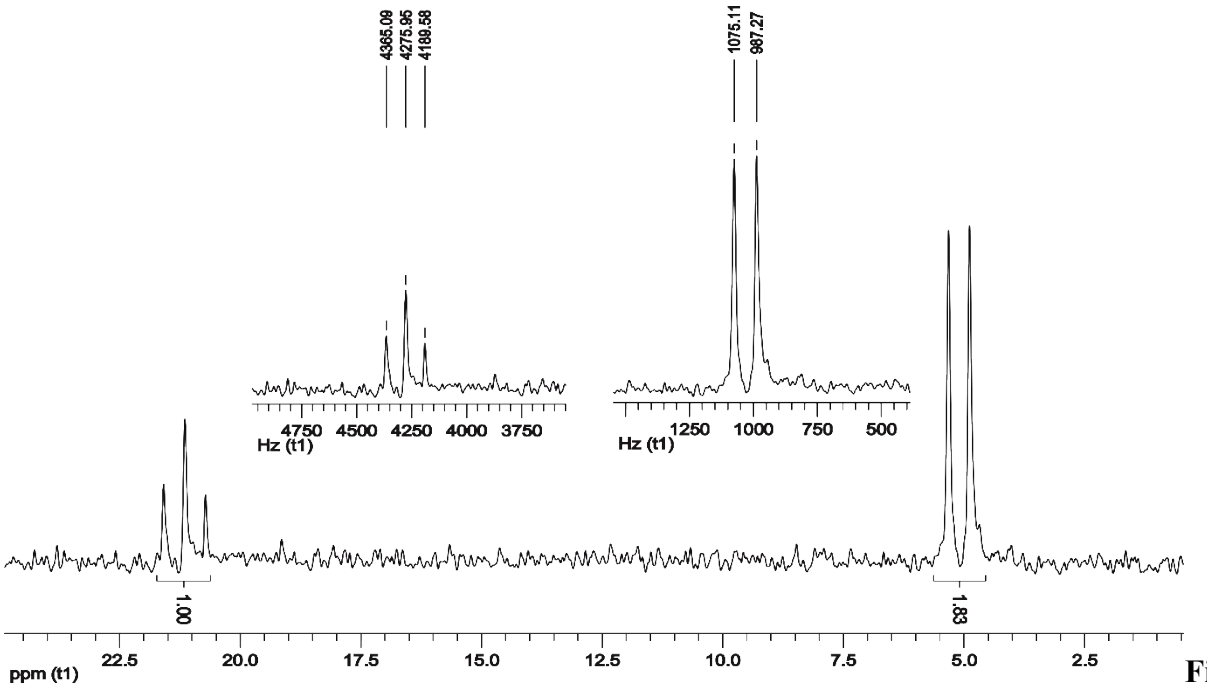


Figure S19. ^{31}P NMR decoupled spectra of Compound 9 in $CDCl_3$

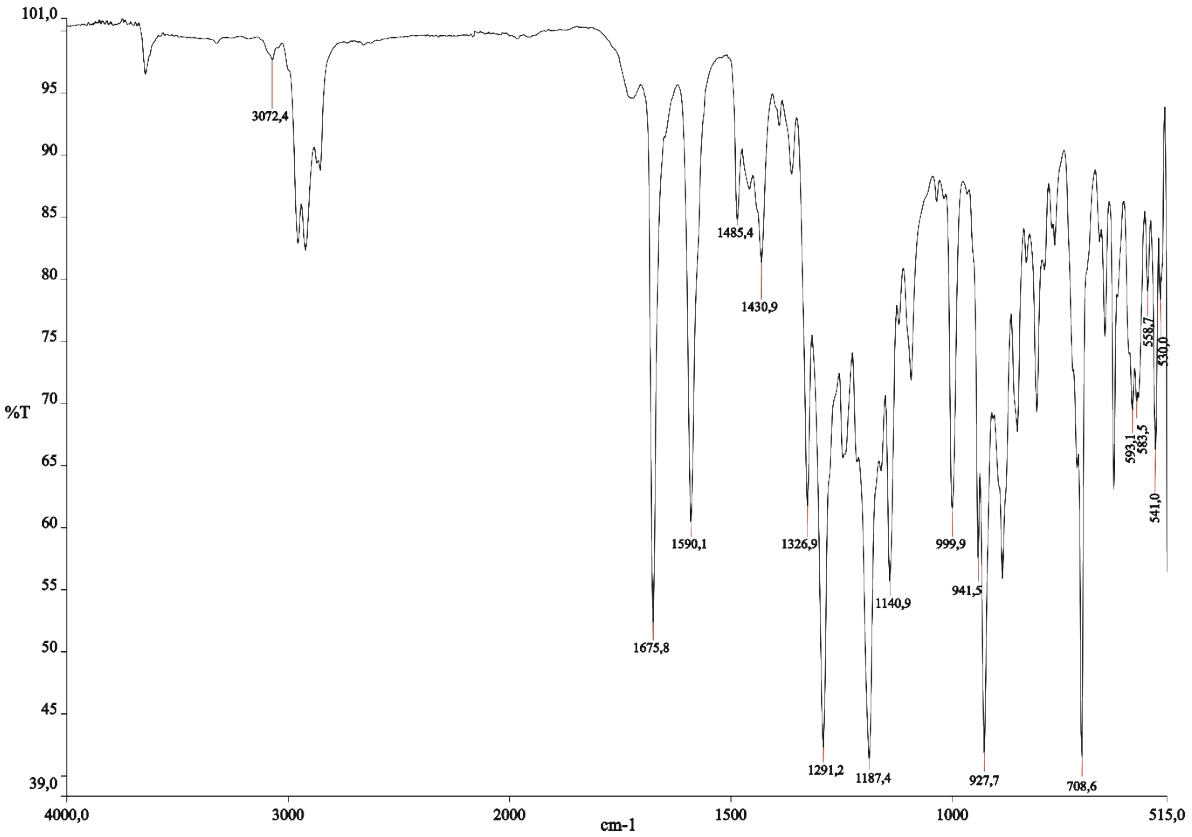
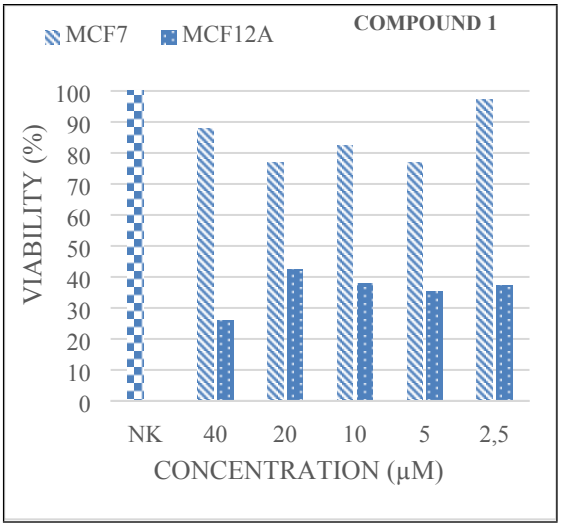
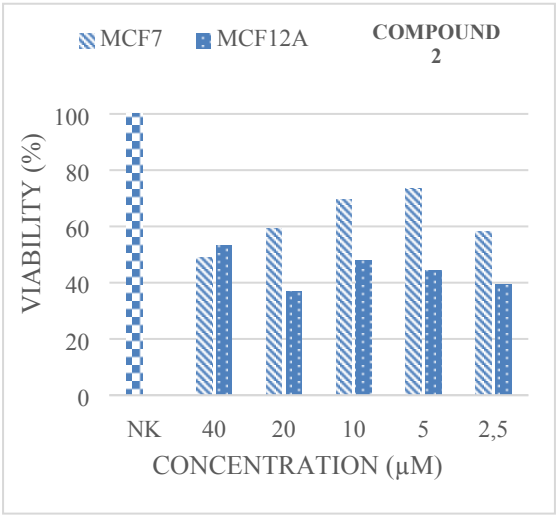
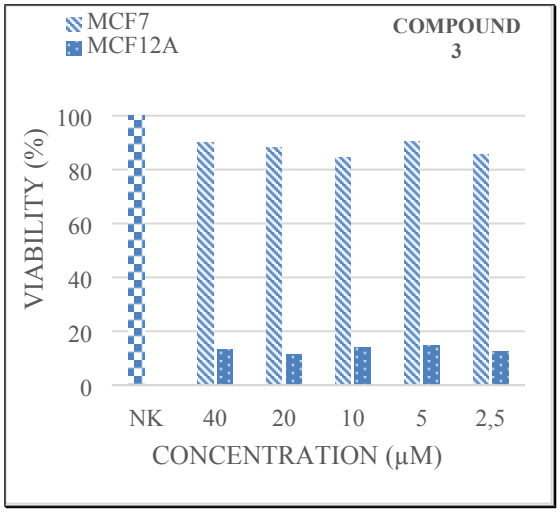


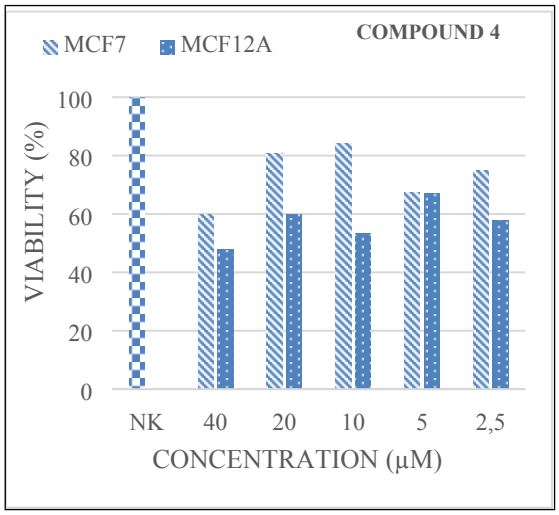
Figure S20. FT-IR spectra of Compound 9

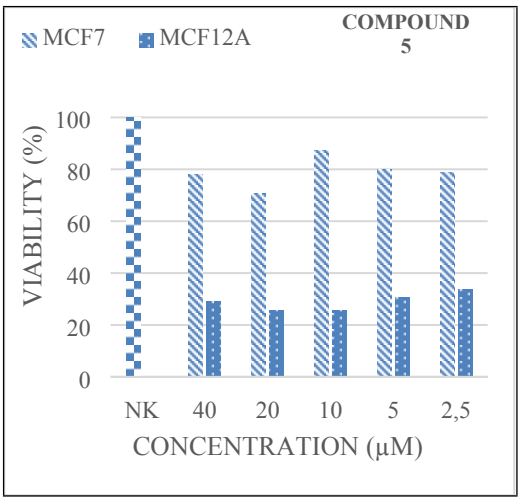
Figure S21. Graphics of the concentrations values of compounds applied in the MCF-7 and MCF12A cell lines according to viability (%) with MTT method.

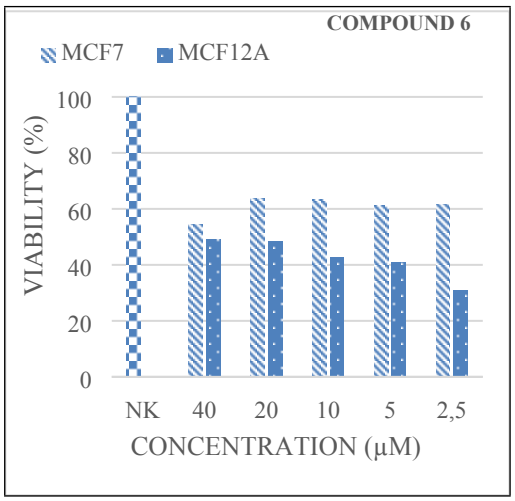


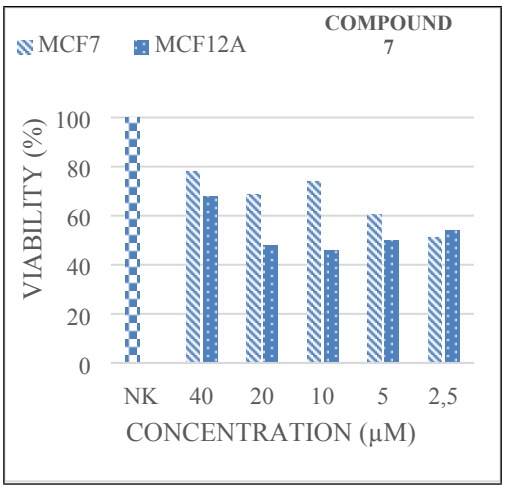


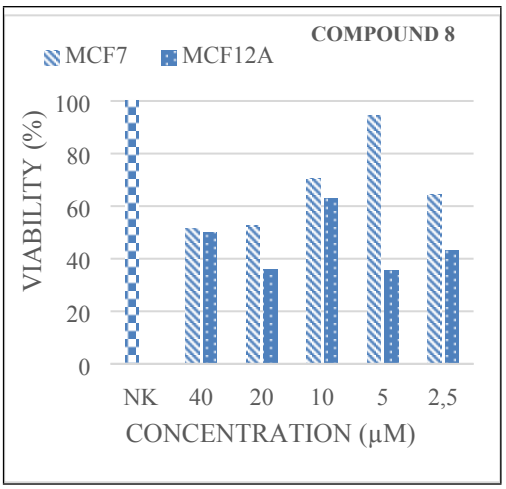





COMPOUND 5
MCF7
MCF12A
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)


COMPOUND 6
MCF7
MCF12A
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)


COMPOUND 7
MCF7
MCF12A
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)


COMPOUND 8
MCF7
MCF12A
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)

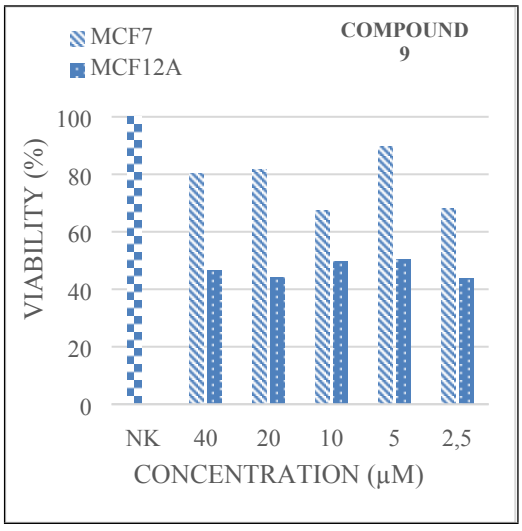
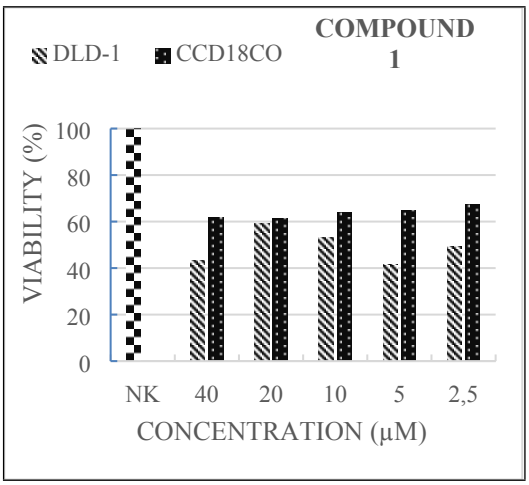
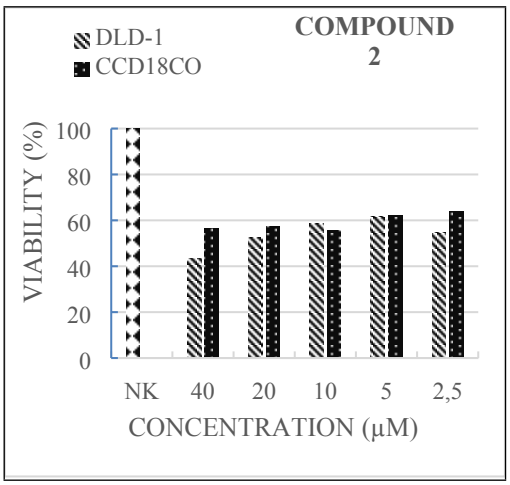
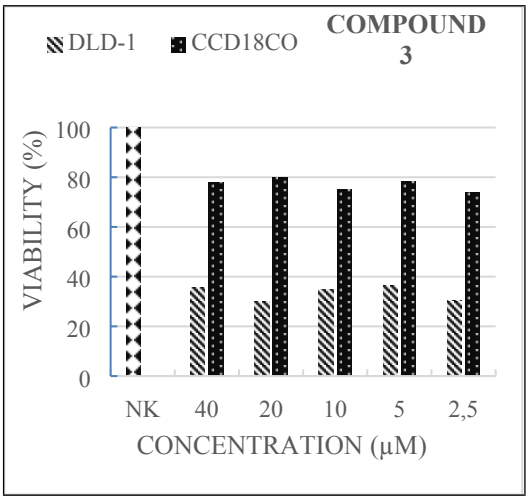
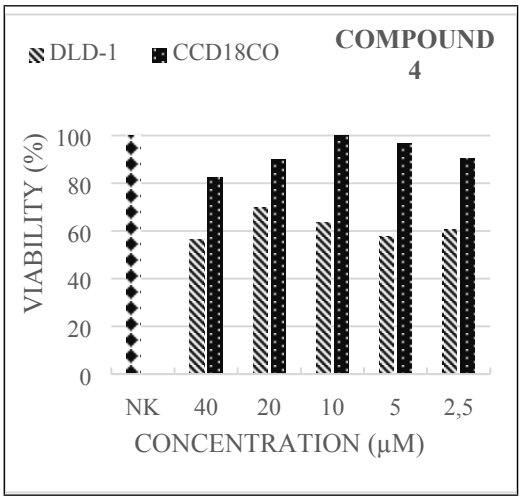

COMPOUND 9
MCF7
MCF12A
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)

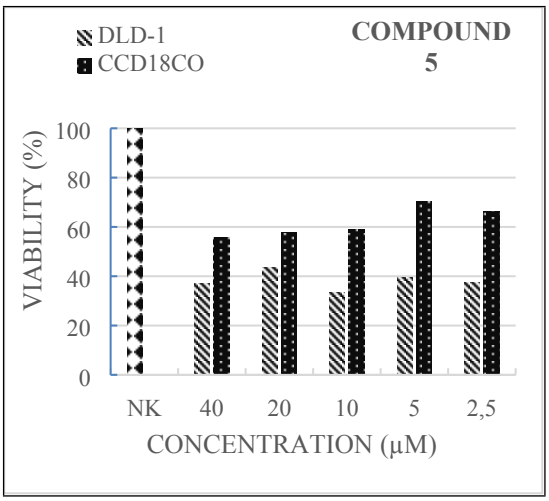
Figure S22. MTT analysis results of compounds in cells. Graphics of the concentrations of compounds applied in the DLD1 and CCD-18CO cell lines according to absorbance with MTT method

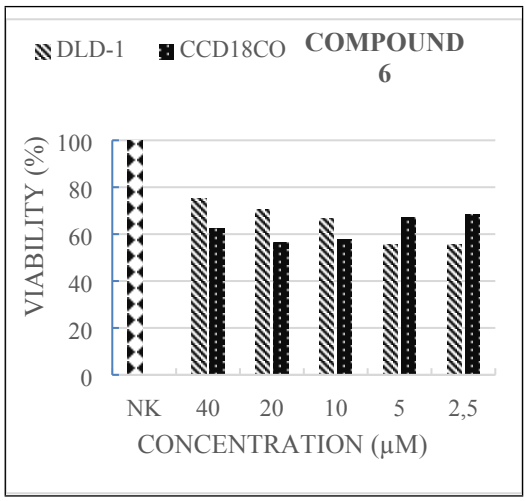


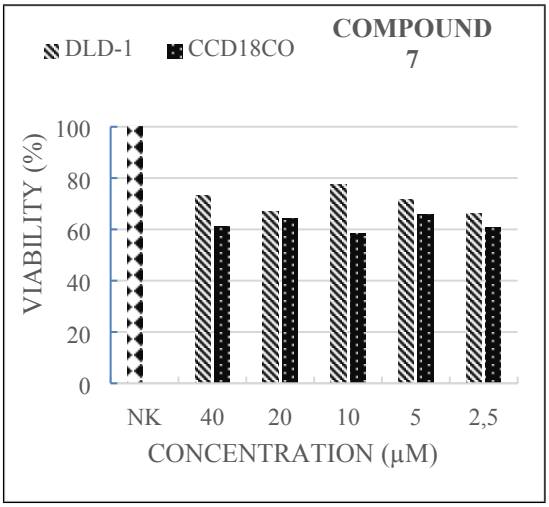


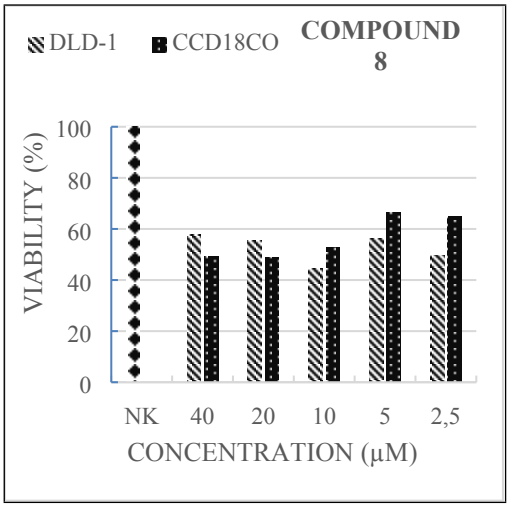





DLD-1
CCD18CO
COMPOUND 5
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)


DLD-1
CCD18CO
COMPOUND 6
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)


DLD-1
CCD18CO
COMPOUND 7
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)


DLD-1
CCD18CO
COMPOUND 8
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)

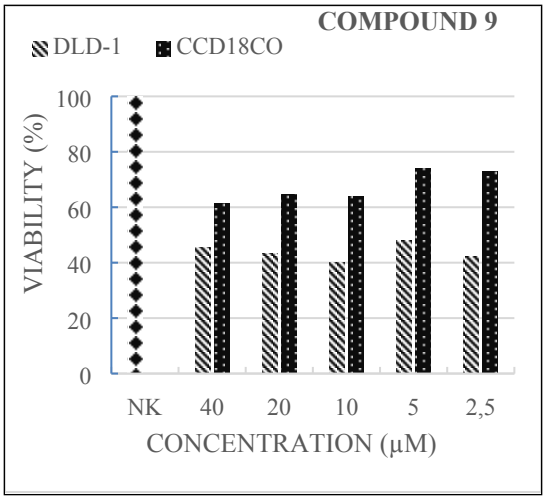

DLD-1
CCD18CO
COMPOUND 9
VIABILITY (%)
100
80
60
40
20
0
NK
40
20
10
5
2,5
CONCENTRATION (µM)

Table S1. Selectivity of the cytotoxicity of anthraquinone derivatives compounds to two cancer cells as compared with normal cells.

Compound No	IC_{50} (μM)[a]			
	MCF-7	**MCF-12A**	**DLD-1**	**CCD-18Co**
1	20	20	40	20
2	40	40	20	10
3	10	5	40	2.5
4	40	10	5	40
5	20	2.5	20	40
6	40	40	5	20
7	2.5	40	40	10
8	40	10	2.5	40
9	10	5	10	40

[a]The selectivity index is the ratio of the IC_{50} values of the treatments on normal cells to those in the cancer cell lines.