Supplementary information

1. ESI-MS + 5'-GMP. TAE buffer:

	$[Pt(NH_3)_2(L)(5'\text{-}GMP)]^+$ in TAE buffer m/z	$[Pt(NH_3)_2(L)(OH_2)]^+$-(H^+) in TAE buffer m/z	$[Pt(NH_3)_2(L)(5'\text{-}GMP]^+$ In sodium cacodylate buffer m/z	$[Pt(NH_3)_2(L)(OH_2)]^+$-(H^+) in sodium cacodylate buffer m/z
1.Pt-trans	981.2	635.3	+	+
2.Pt-trans	981.3	635.2		
3.Pt-trans	1030.2	685.3		
4.Pt-trans	1030.3	685.3		
5.Pt-trans	1030.3	685.3		
1.Pt-cis	981.2	635.2	+	-
4.Pt-cis	1030.3	685.3		
5.Pt-cis	1030.2	685.3		
Py.Pt-trans	670.1	324.2	+	+
Qui.Pt-trans	721.1	375.3		
Py.Pt-cis	670.1	324.2	+	-

2. NMR + 5'-GMP:

Py.Pt-trans + GMP:

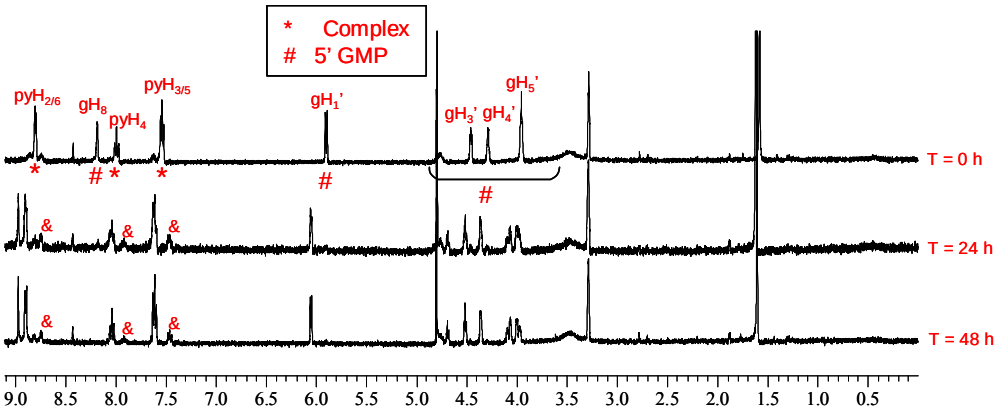


Figure 2.1 ^{1}H NMR spectra for Py.Pt-trans with 5'-GMP in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio. &, hydrolysis product.

Py.Pt-cis + GMP:

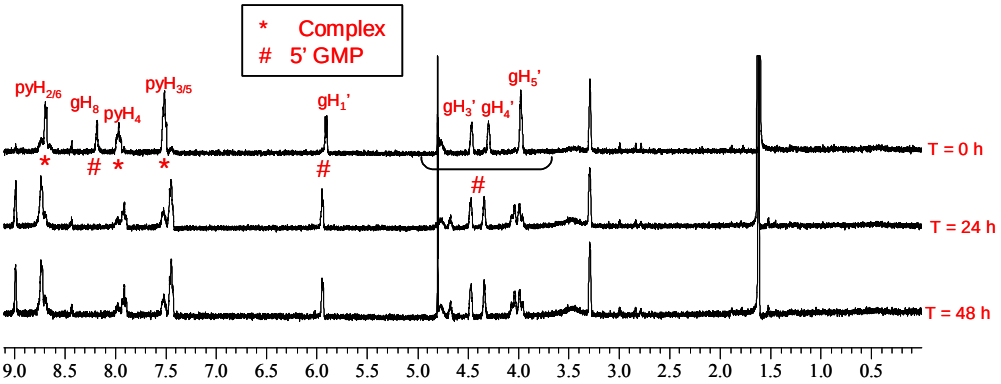


Figure 2.2 ^{1}H NMR spectra for Py.Pt-cis with 5'-GMP in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio.

3. NMR + 9-Ethylguanine:

Py.Pt-cis + 9 Ethyl Guanine:

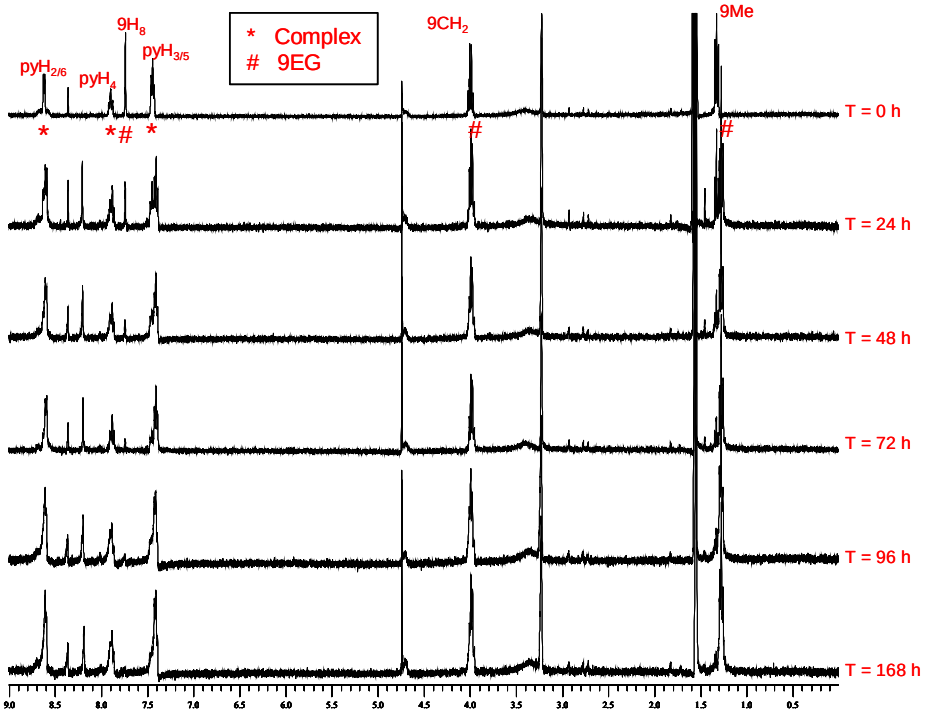


Figure 3.1 ^{1}H NMR spectra for Py.Pt-cis with 9-EG in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio.

Py.Pt-trans + 9 Ethyl Guanine:

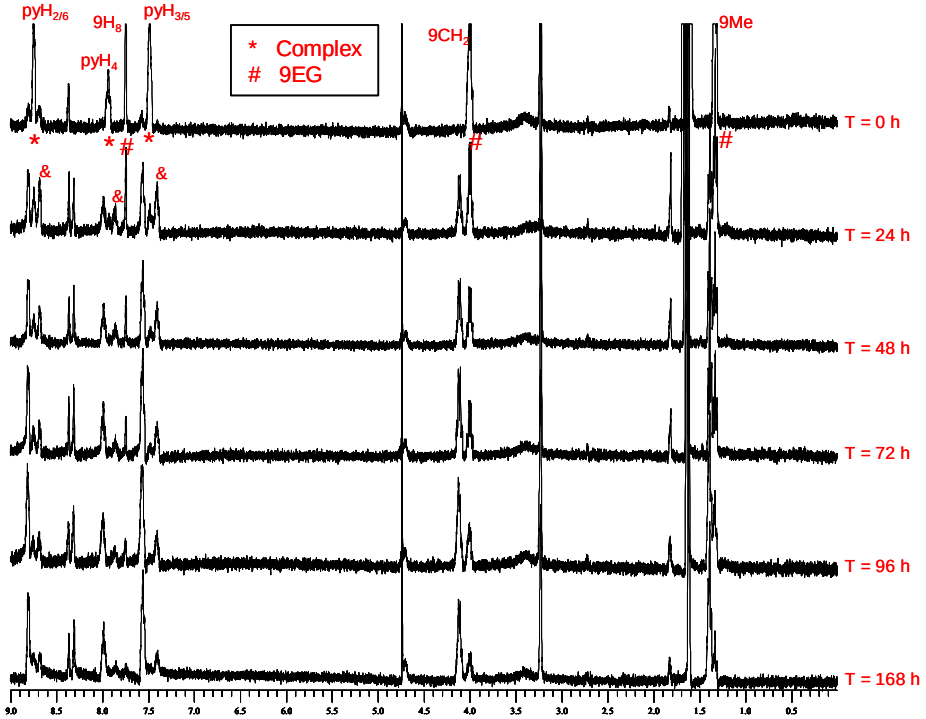


Figure 3.2 ^{1}H NMR spectra for Py.Pt-trans and 9-EG in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio. &, hydrolysis product.

1.Pt-cis + 9 Ethyl Guanine:

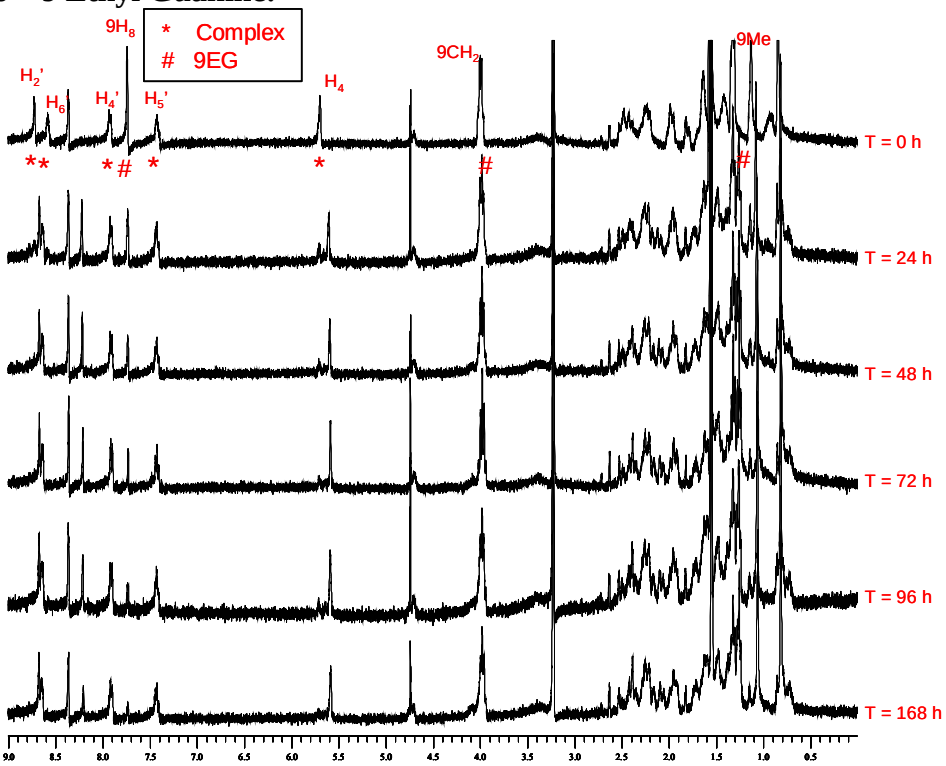


Figure 3.3 ^{1}H NMR spectra for 1.Pt-cis with 9-EG in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio.

1.Pt-trans + 9 Ethyl Guanine:

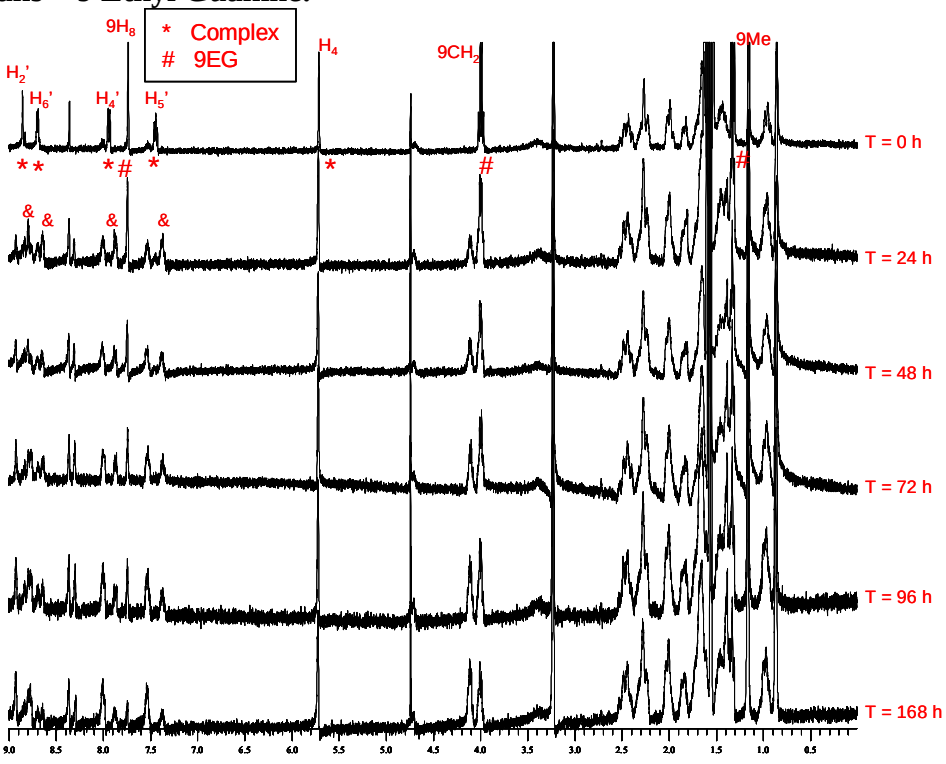


Figure 3.4 ^{1}H NMR spectra for 1.Pt-trans and 9-EG in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio. &, hydrolysis product.

4. NMR + Hydrolysis:

Py.Pt-trans Hydrolysis:

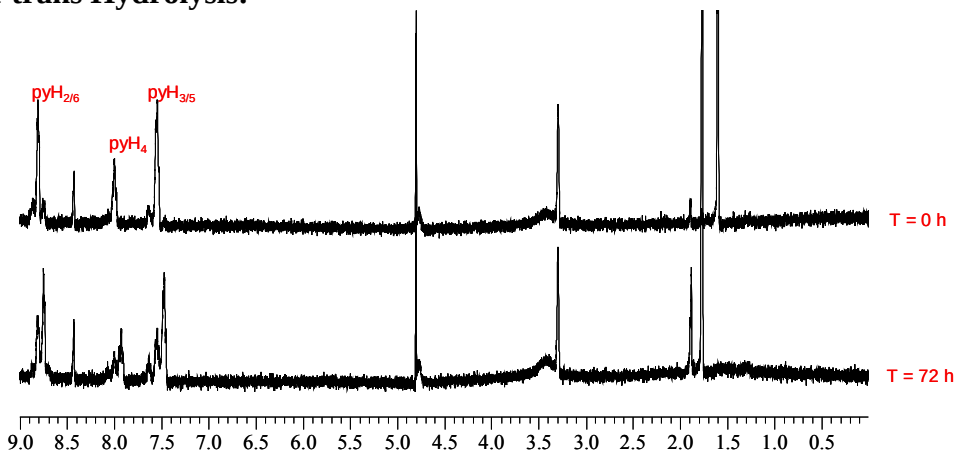


Figure 4.1 ^{1}H NMR spectra for Py.Pt-trans hydrolysis in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio.

Py.Pt-cis Hydrolysis:

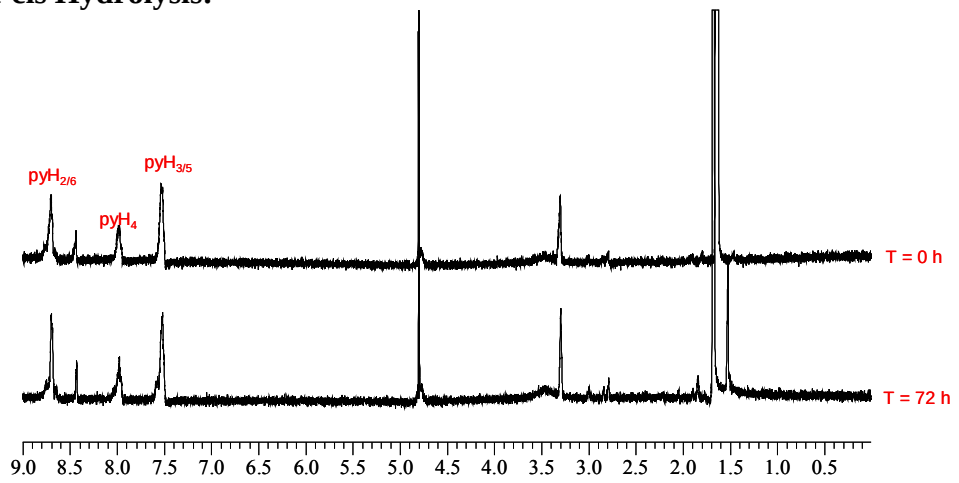


Figure 4.2 ^{1}H NMR spectra for Py.Pt-cis hydrolysis in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio.

1.Pt-trans Hydrolysis:

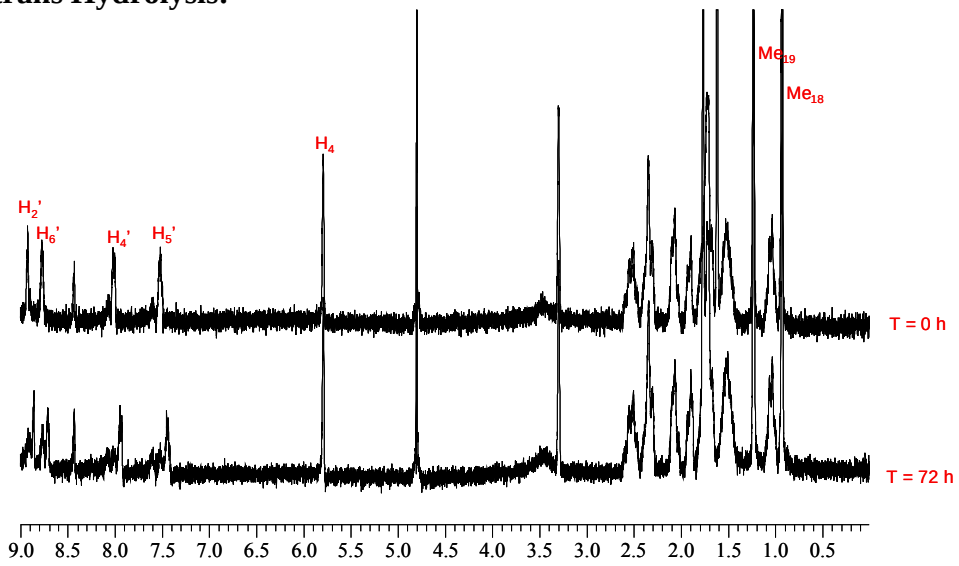


Figure 4.3 ^{1}H NMR spectra 1.Pt-trans hydrolysis in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio.

1.Pt-cis Hydrolysis:

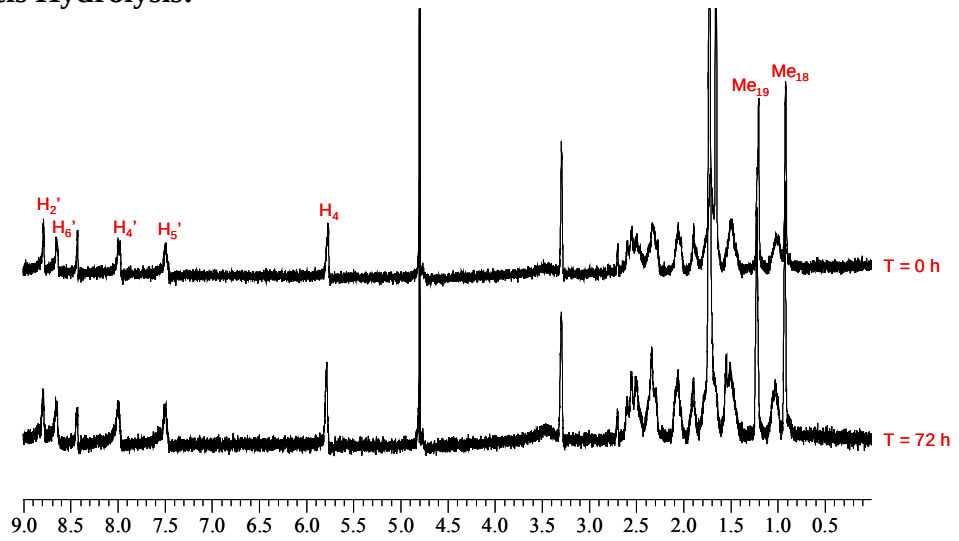
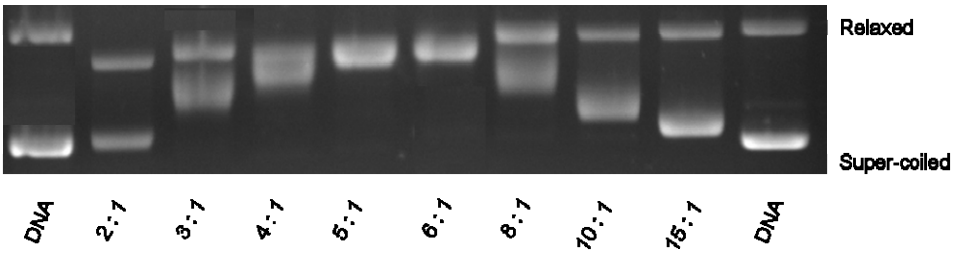


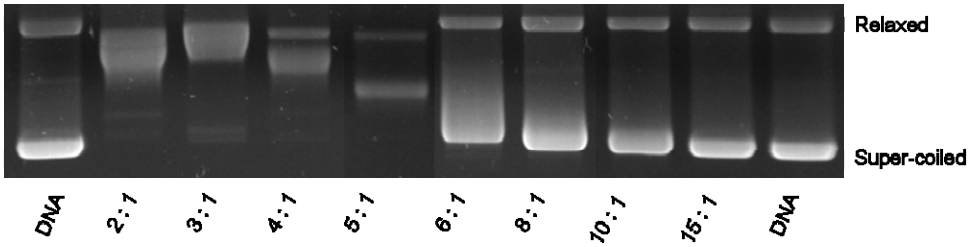
Figure 4.4 ^{1}H NMR spectra for 1.Pt-cis hydrolysis in 1mM sodium cacodylate buffer in D_2O (pH 6.8) and 1:1 nucleotide:complex ratio.

5. Gel electrophoresis:

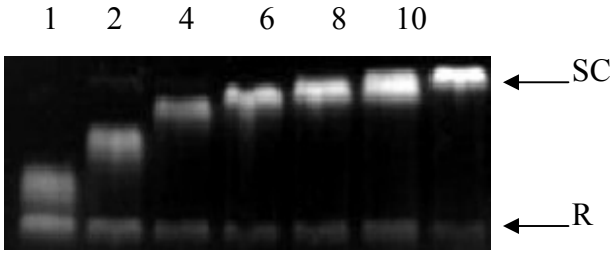
cisplatin



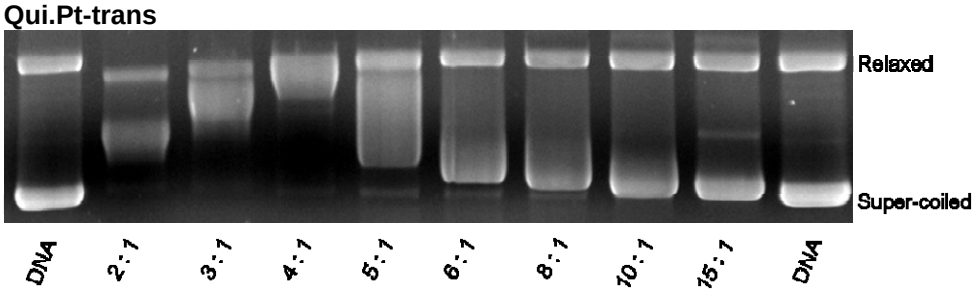
Py.Pt-trans



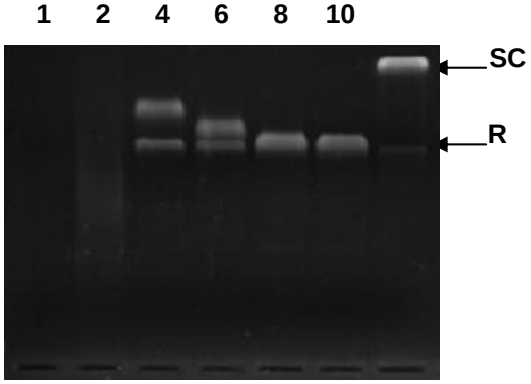
Py.Pt-cis



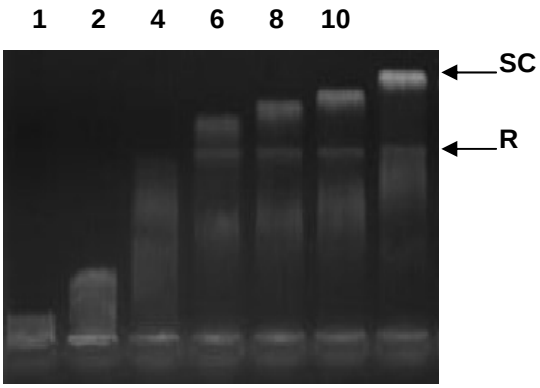
Qui.Pt-trans



1.Pt-trans

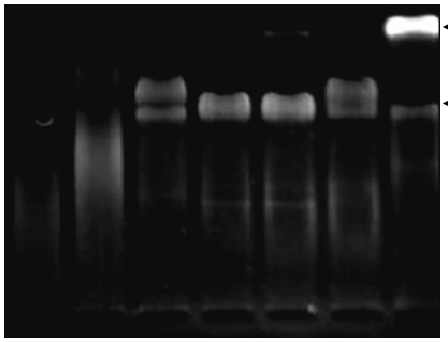


2.Pt-trans



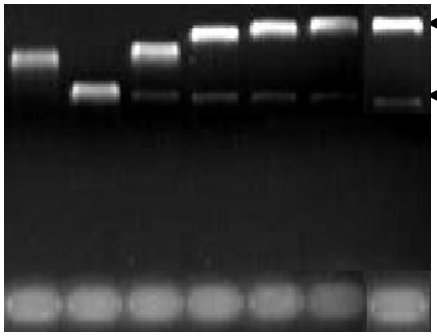
3.Pt-trans

1 2 4 6 8 10



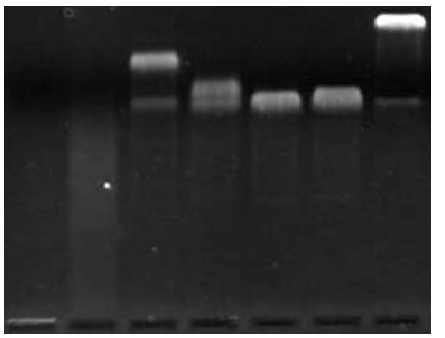
4.Pt-trans

1 2 4 6 8 10



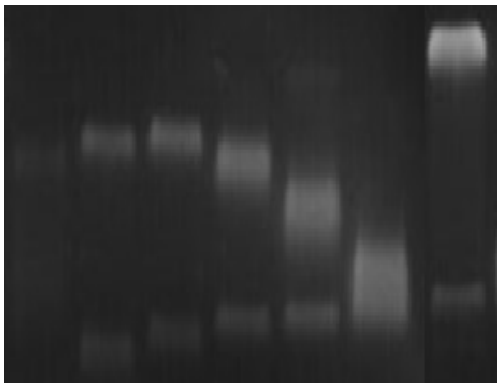
5.Pt-trans

1 2 4 6 8 10



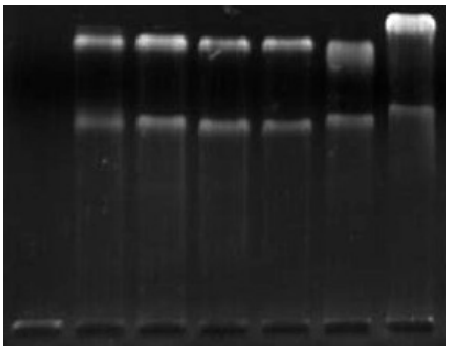
1.Pt-cis

1 2 4 6 8 10



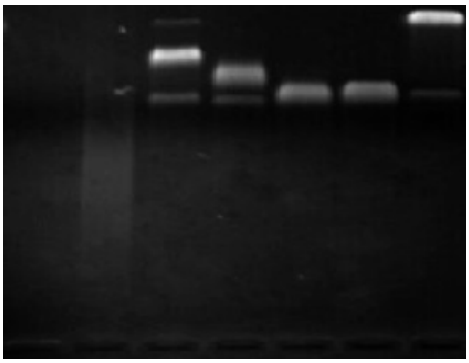
4.Pt-cis

1 2 4 6 8 10

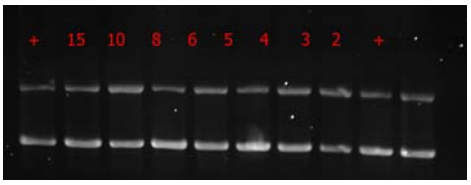


5.Pt-cis

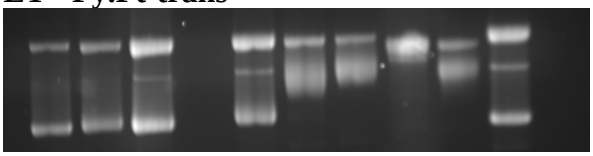
1 2 4 6 8 10



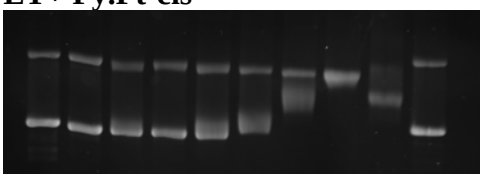
ET



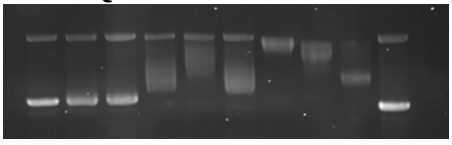
ET+ Py.Pt-trans



ET+ Py.Pt-cis



ET+ Qui.Pt-trans



6. Linear Dichroism:

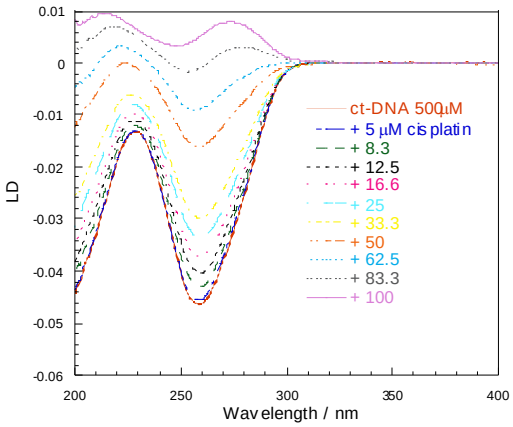


Figure 6.1 The *LD* / absorbance spectra, change in *LD* versus loading of cisplatin and ct-DNA.

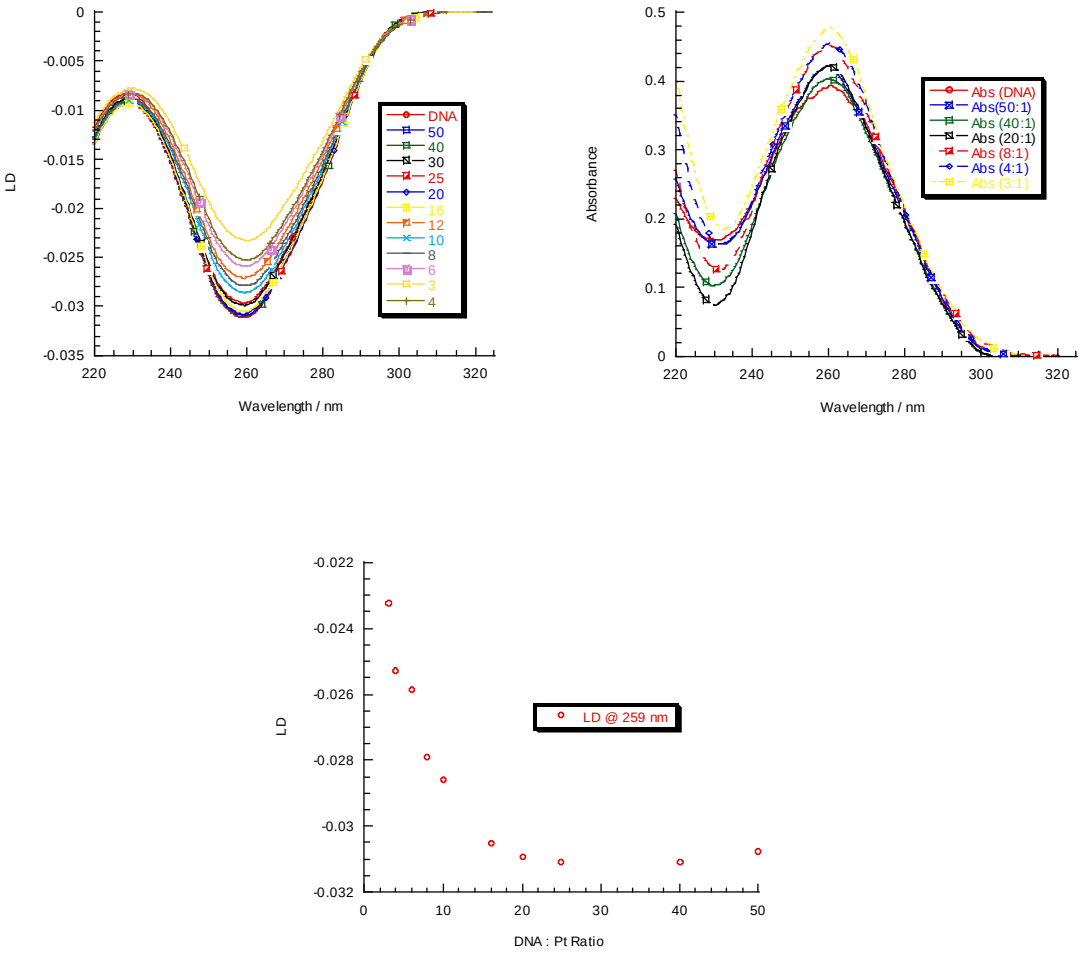


Figure 6.2 The *LD* / absorbance spectra, change in *LD* versus loading of Py.Pt-trans and ct-DNA.

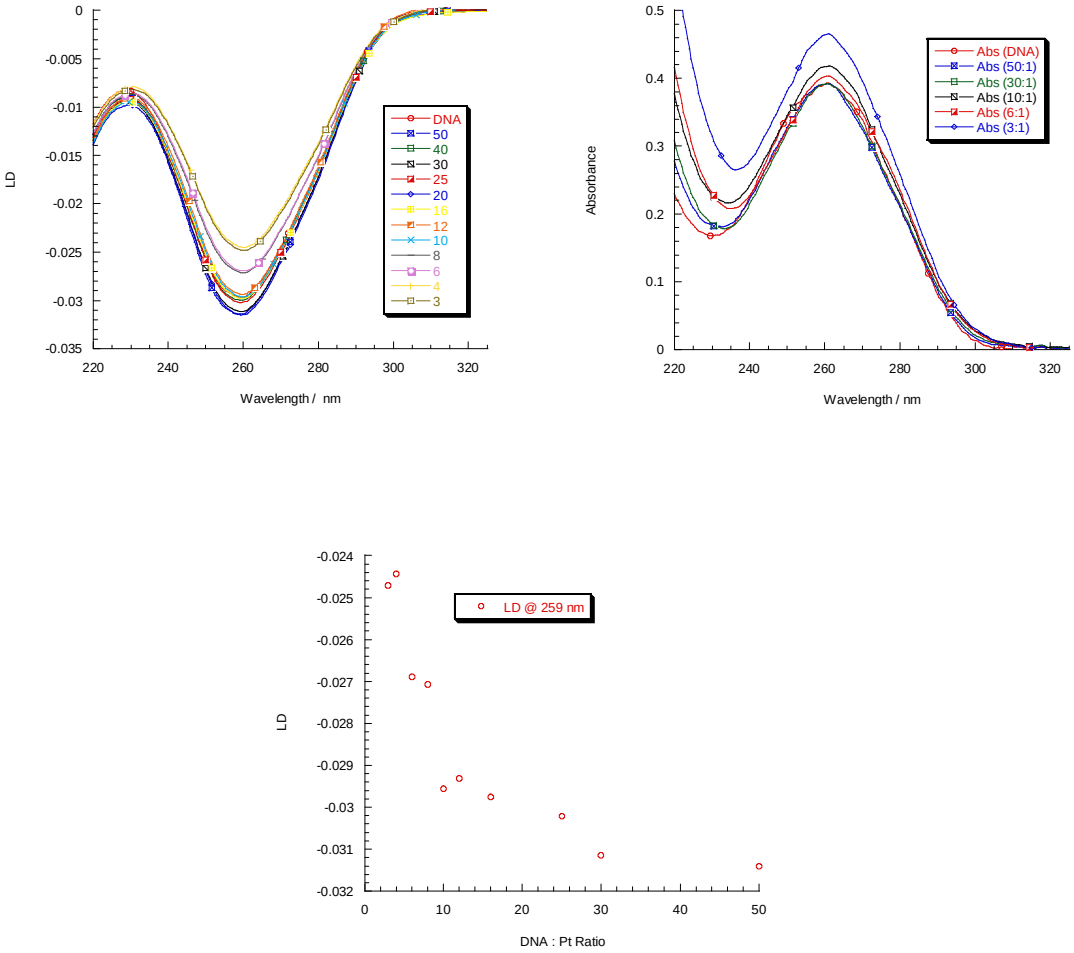


Figure 6.3 The *LD* / absorbance spectra, change in *LD* versus loading of Py.Pt-cis and ct-DNA.

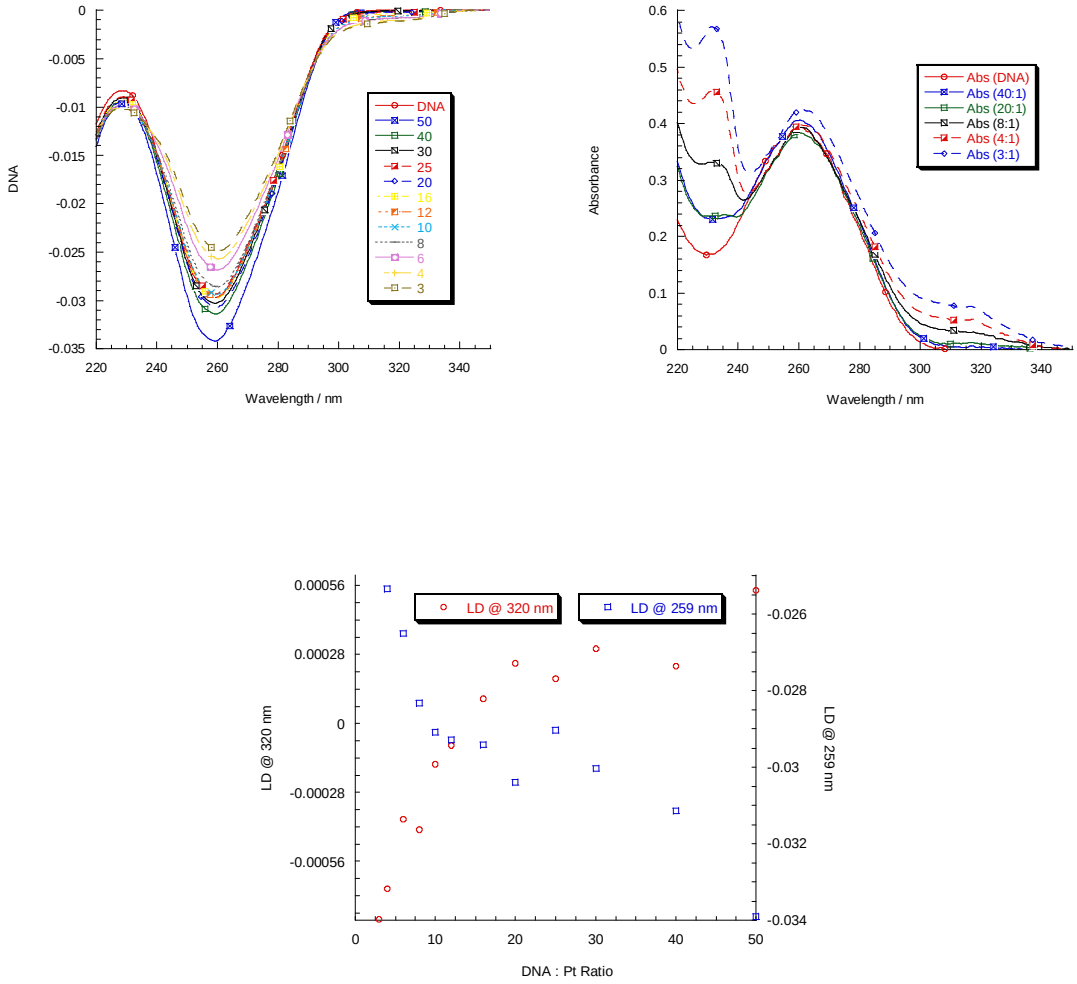


Figure 6.4 The *LD* / absorbance spectra and change in *LD* versus loading of Qui.Pt-trans and ct-DNA.

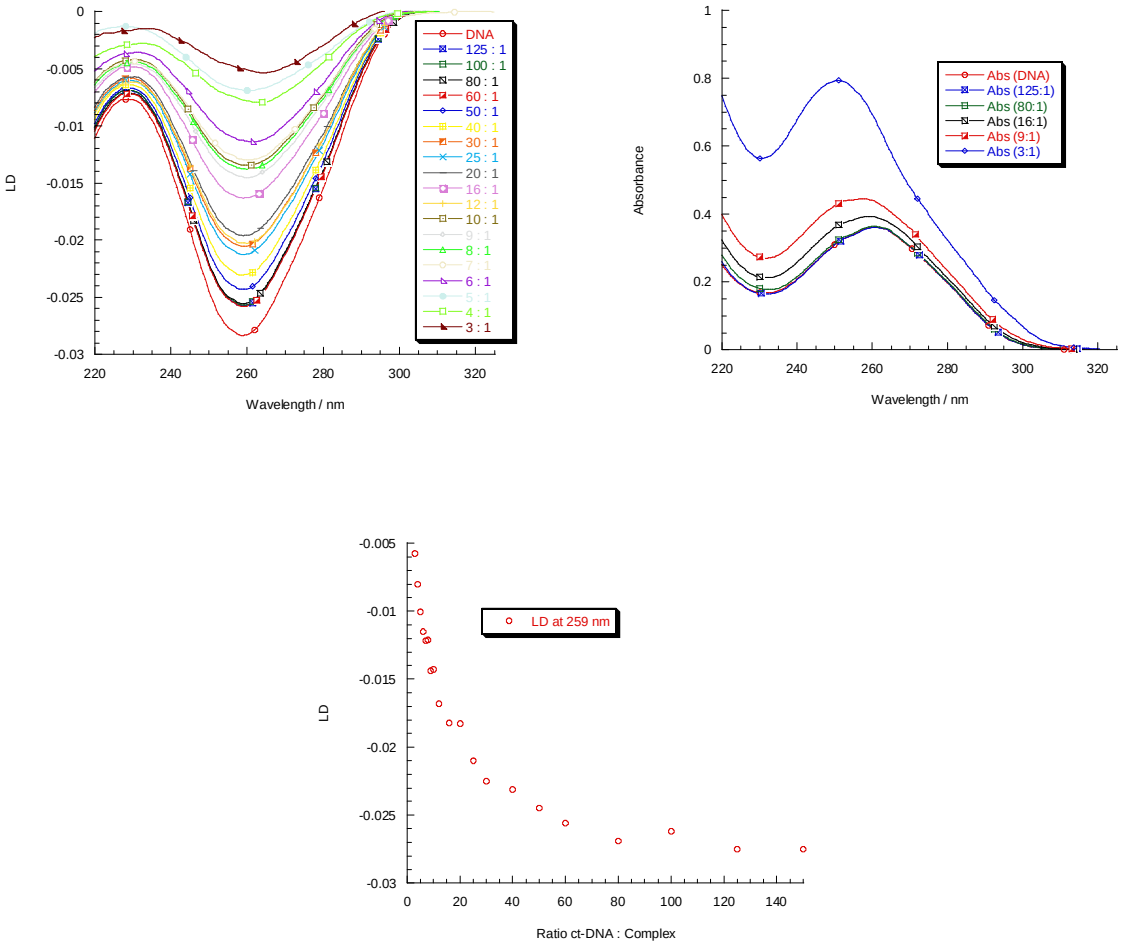


Figure 6.5 The *LD* / absorbance spectra and change in *LD* versus loading of 1.Pt-trans and ct-DNA.

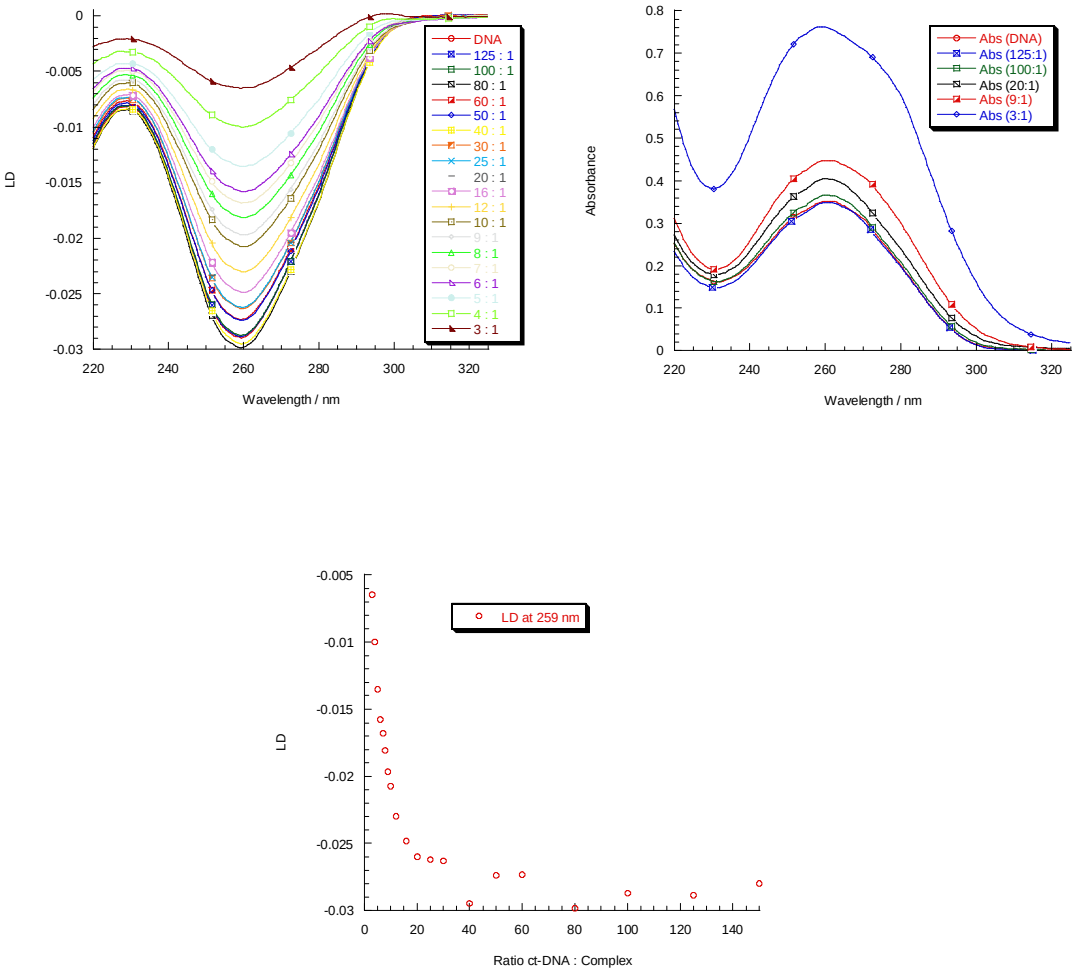


Figure 6.6 The LD / absorbance spectra and change in LD versus loading of 2.Pt-trans and ct-DNA.

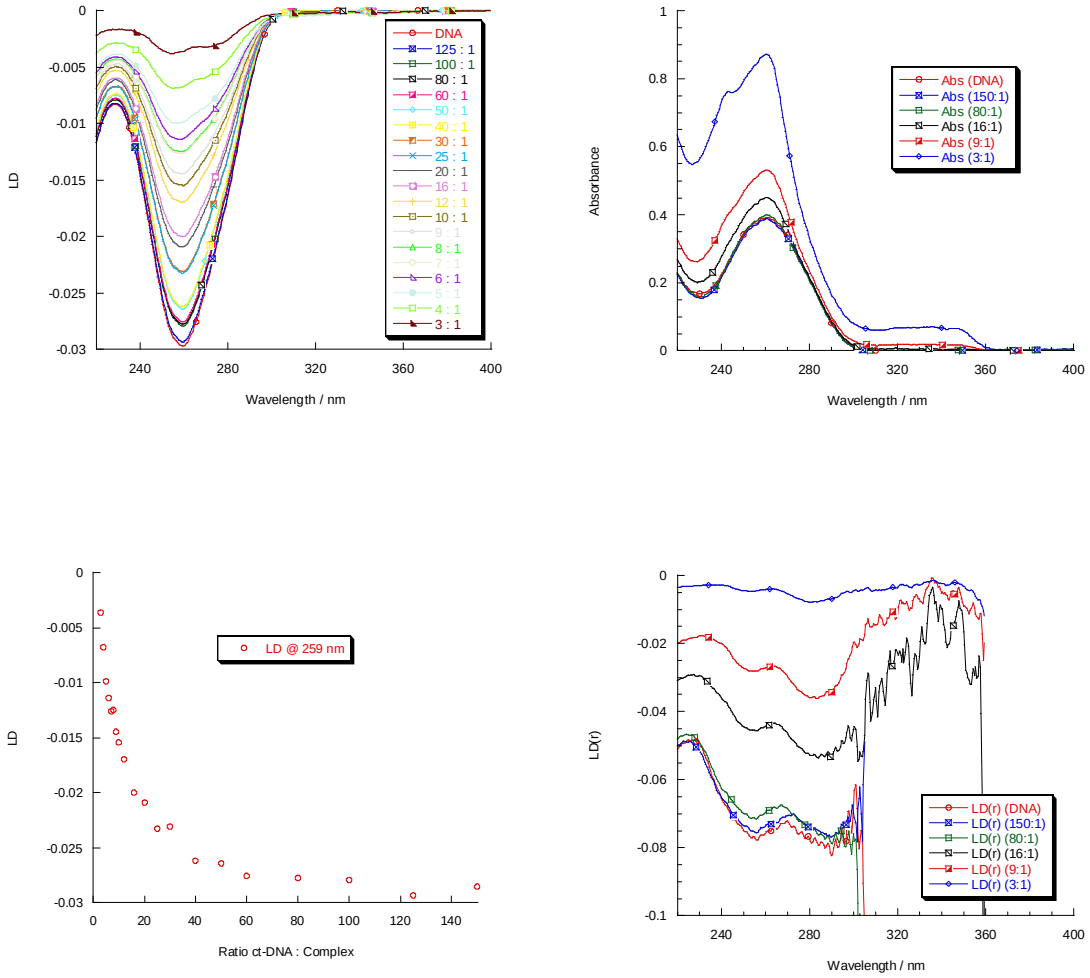


Figure 6.7 The *LD* / absorbance spectra, change in *LD* versus DNA:complex ratio and LD^r of the complex 3.Pt-trans with ct-DNA.

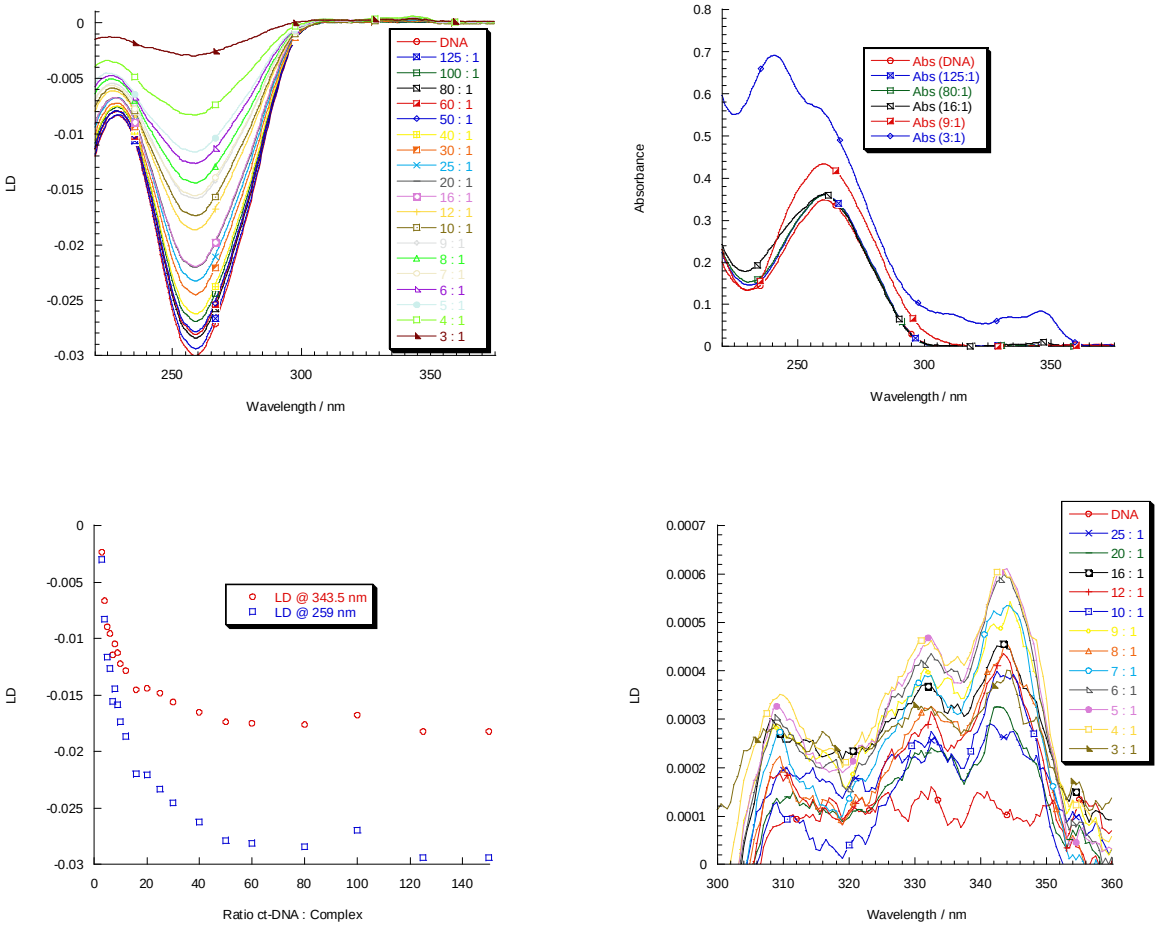


Figure 6.8 The *LD* / absorbance spectra, change in *LD* versus DNA:complex ratio and expansion of the *LD* spectrum of 4.Pt-trans with ct-DNA.

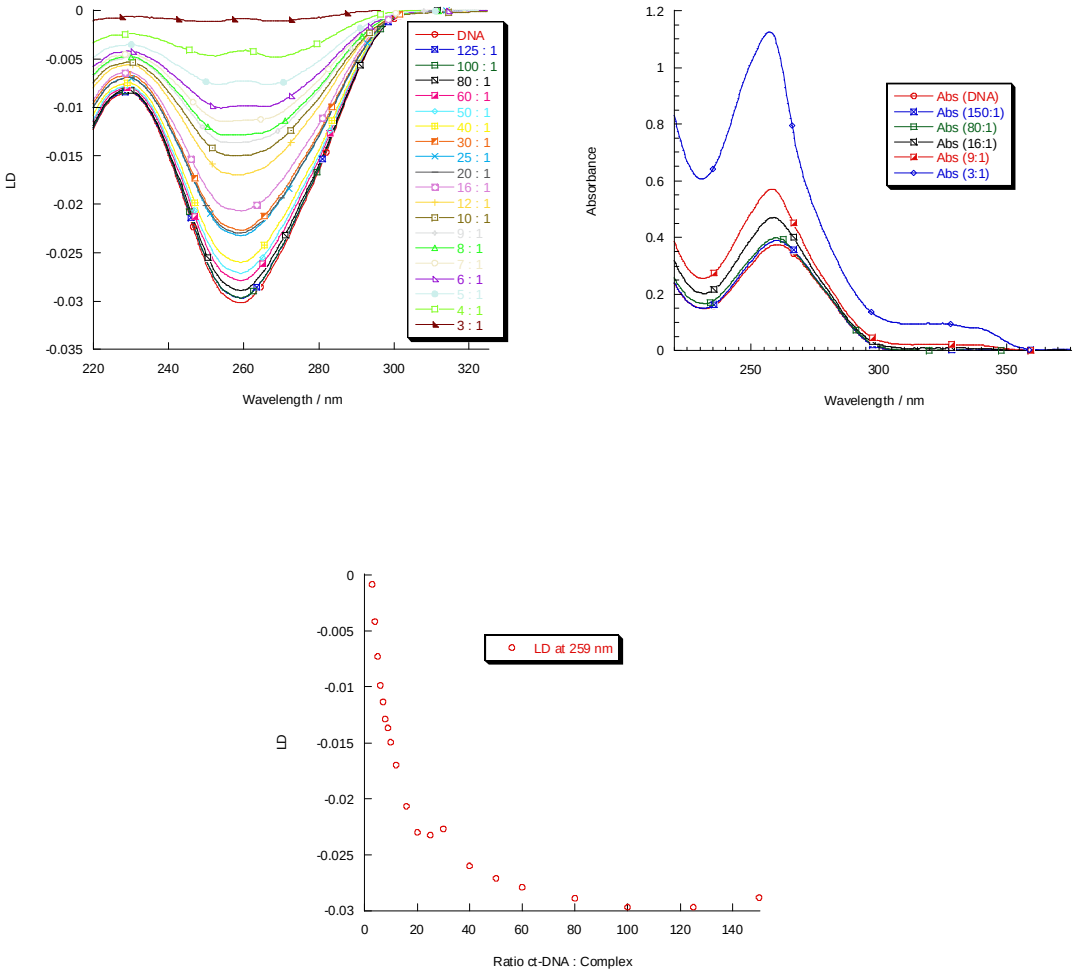


Figure 6.9 The LD / absorbance spectra, change in LD versus DNA:complex ratio and LD^r of 5.Pt-trans and ct-DNA.

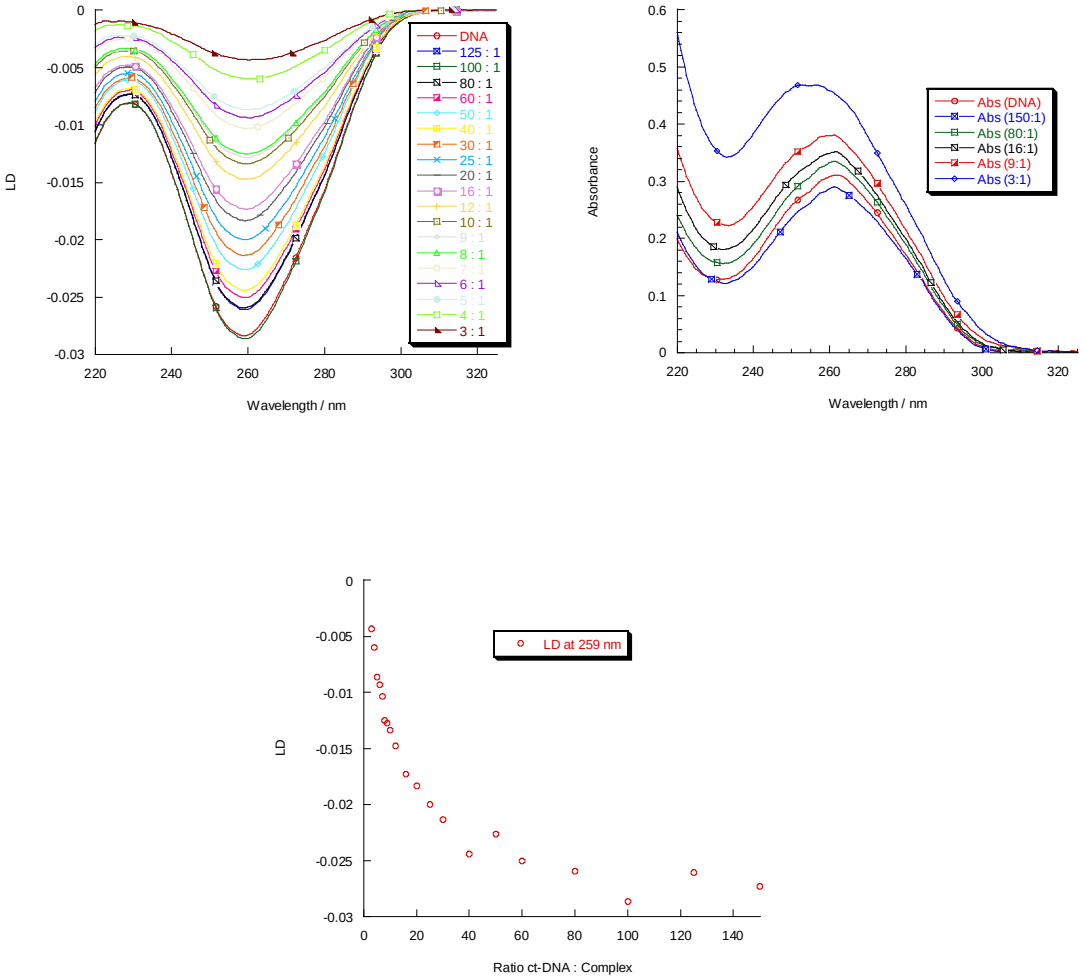


Figure 6.10 The LD / absorbance spectra and change in LD versus loading of 1.Pt-cis and ct-DNA.

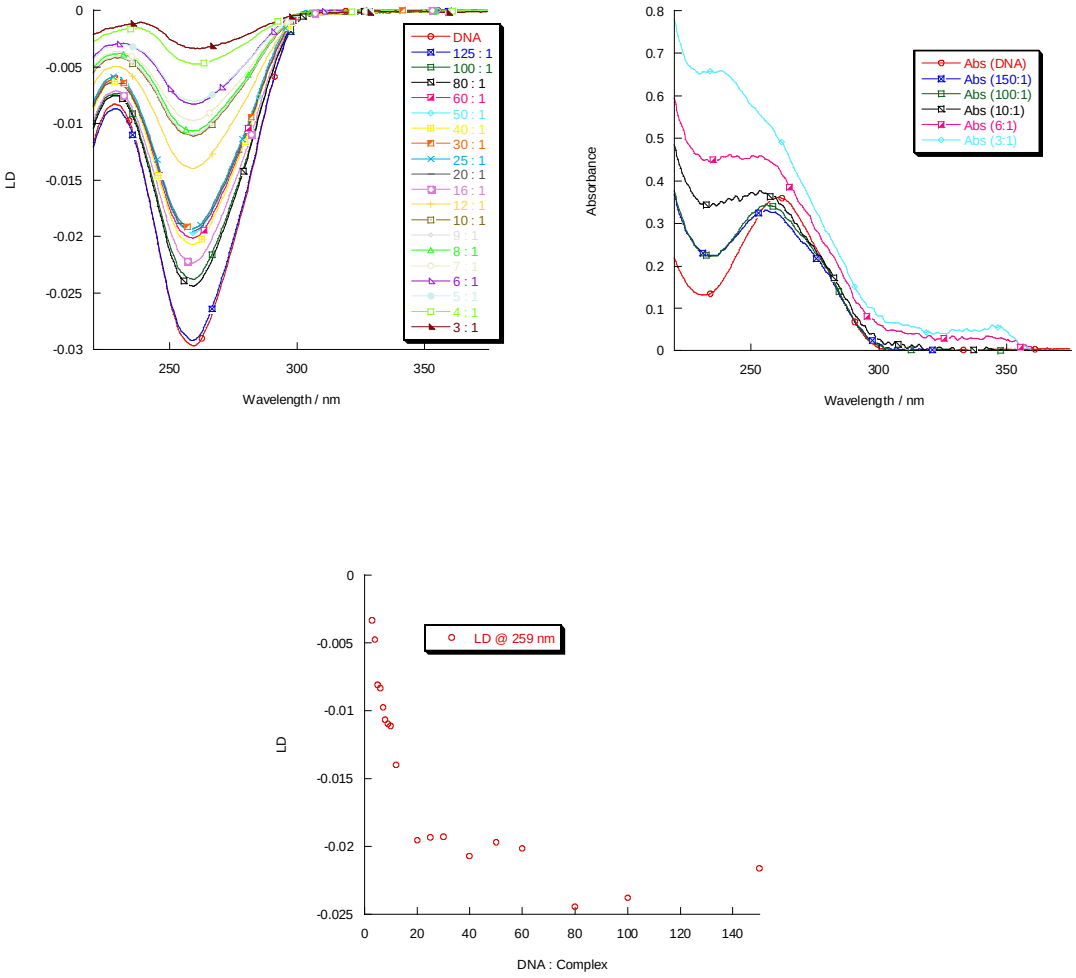


Figure 6.11 The *LD* / absorbance spectra, change in *LD* versus DNA:complex ratio and LD^r of the complex 4.Pt-cis with ct-DNA.

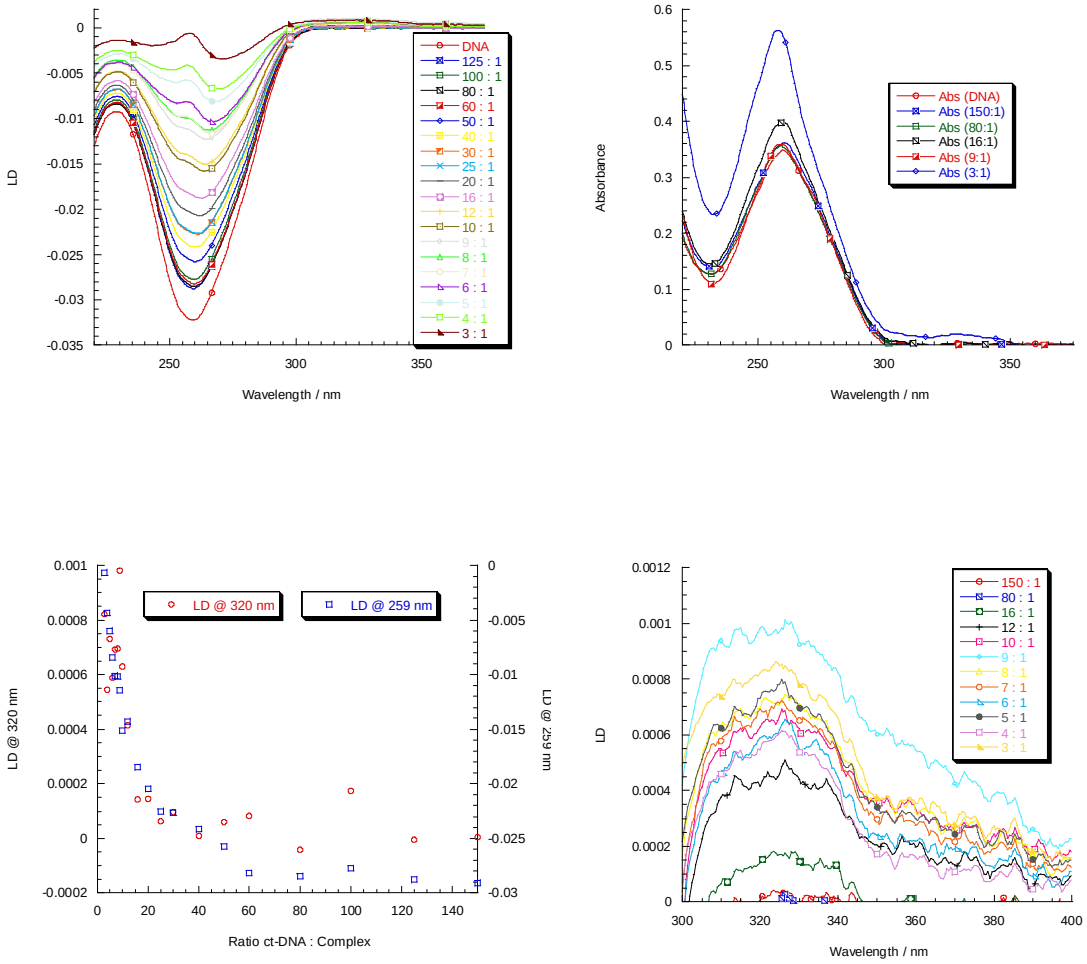
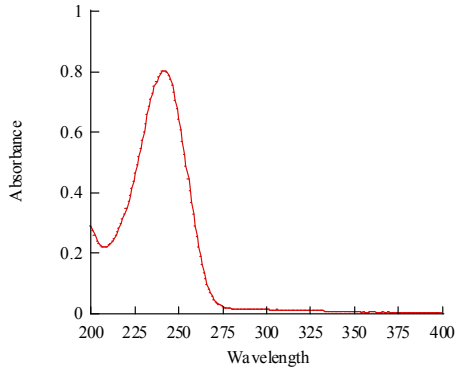
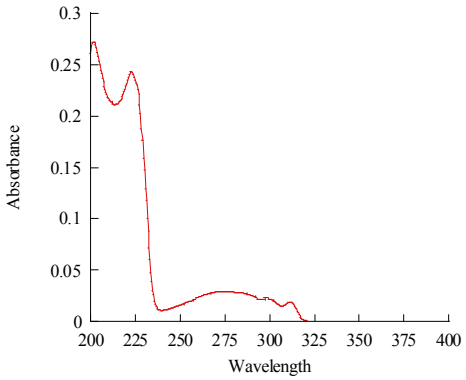


Figure 6.12 The LD / absorbance spectra, change in LD versus DNA:complex ratio and LD^r of 5.Pt-cis (experiment two) and ct-DNA.

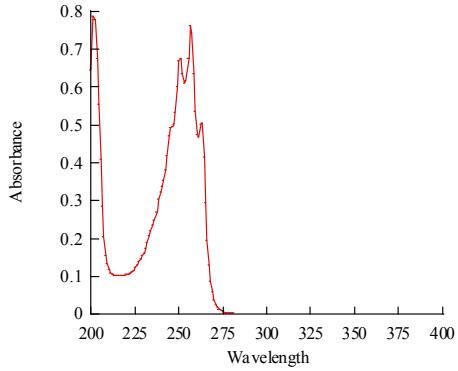
7. UV/Vis of the complexes:



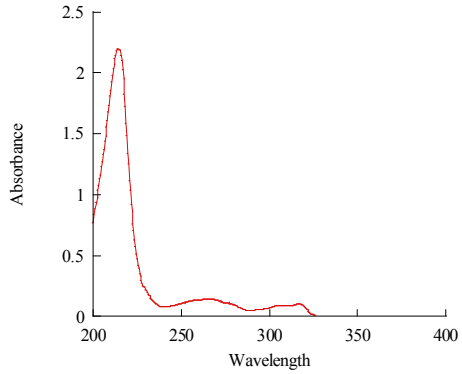
Ethisterone



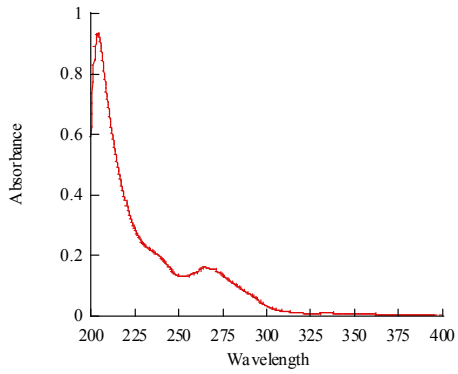
Quinoline



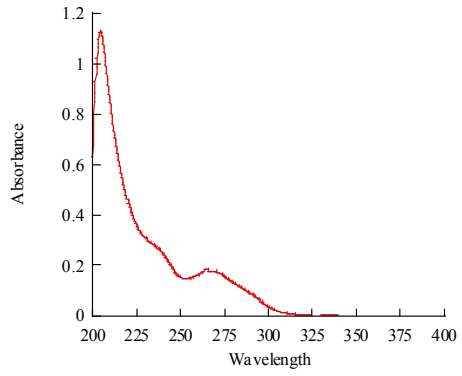
Pyridine



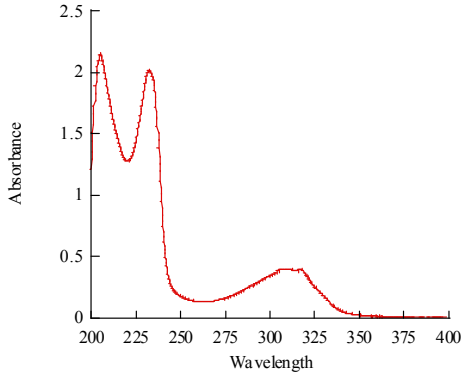
Isoquinoline



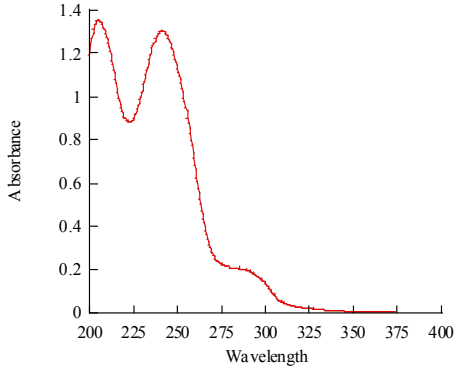
Py.Pt-trans



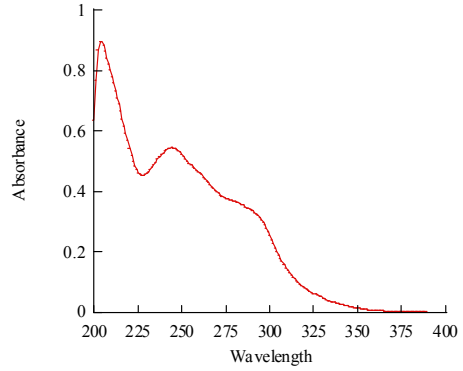
Py.Pt-cis



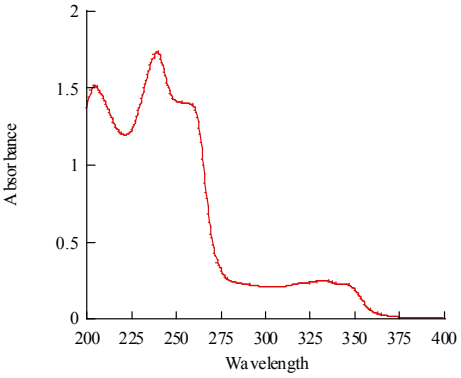
Qui.Pt-trans



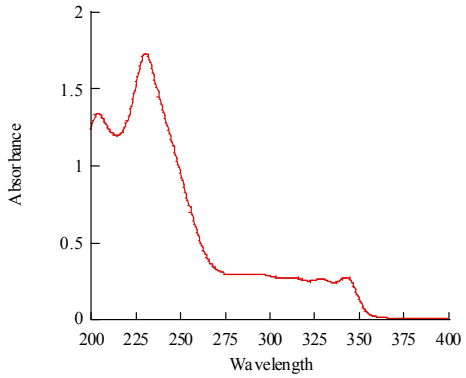
1.Pt-trans



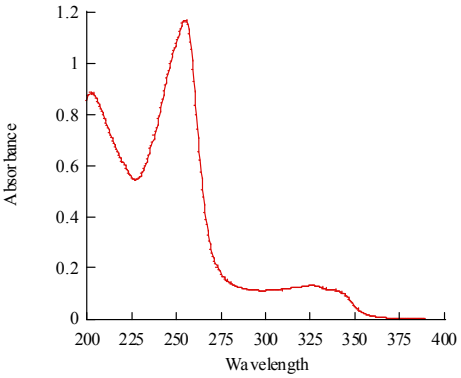
2.Pt-trans



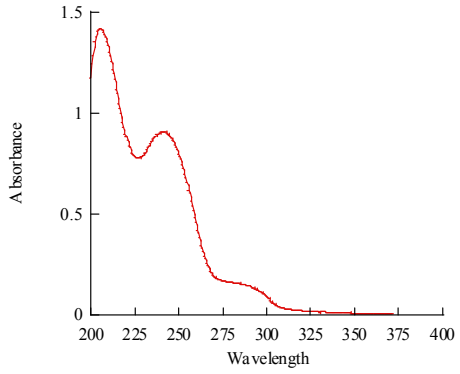
3.Pt-trans



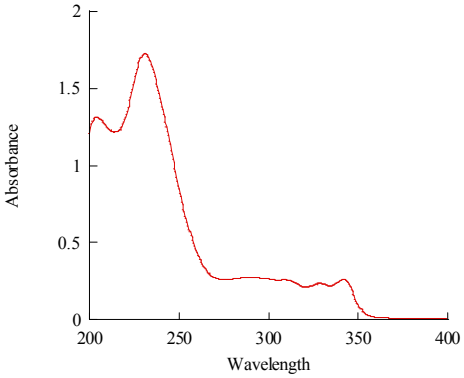
4.Pt-trans



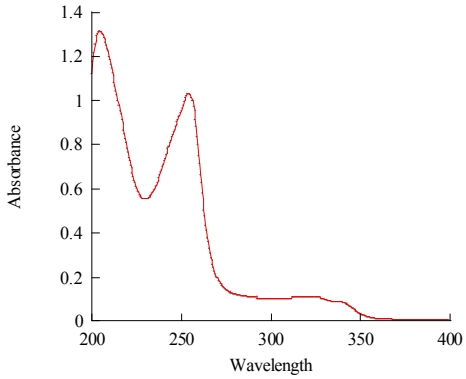
5.Pt-trans



1.Pt-cis



4.Pt-cis



5.Pt-cis

8. Circular Dichroism:

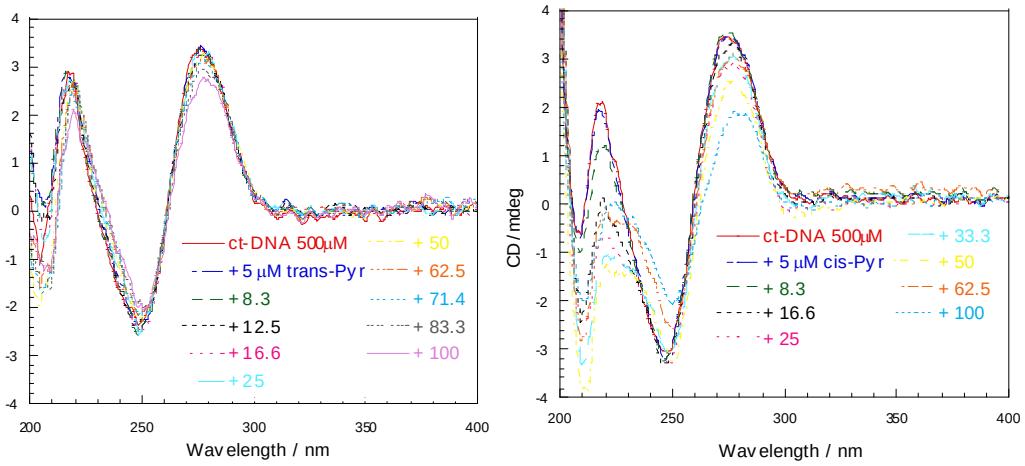


Figure 8.1. ct-DNA CD titration with Py.Pt.cis (right) and Py.Pt-trans (left).

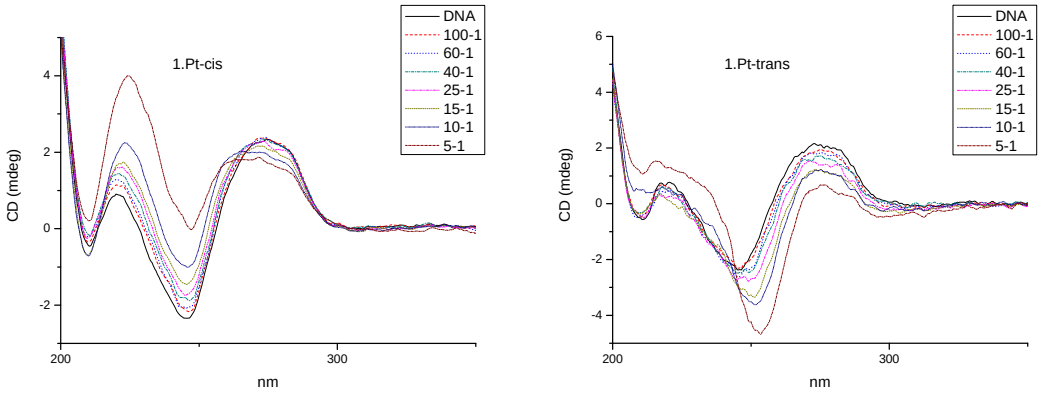


Figure 8.2 . ct-DNA CD titration with 1.Pt-cis and 1.Pt-trans.

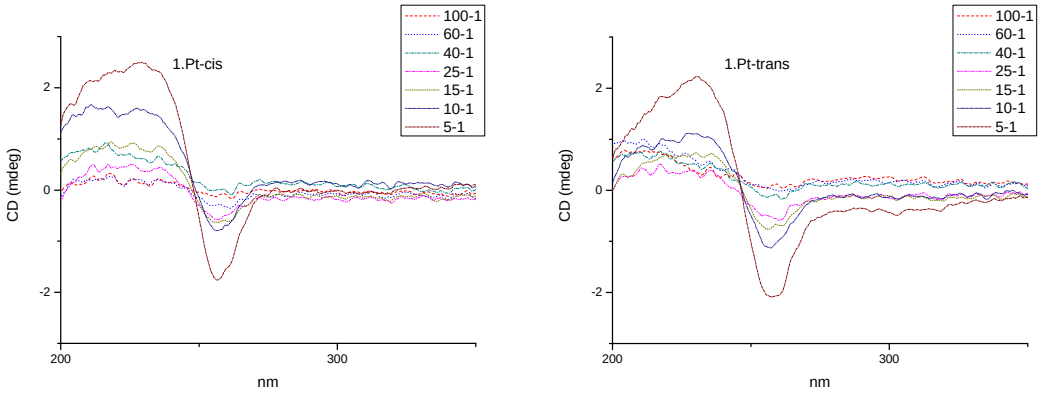


Figure 8.3 . CD titration with 1.Pt-cis and 1.Pt-trans.

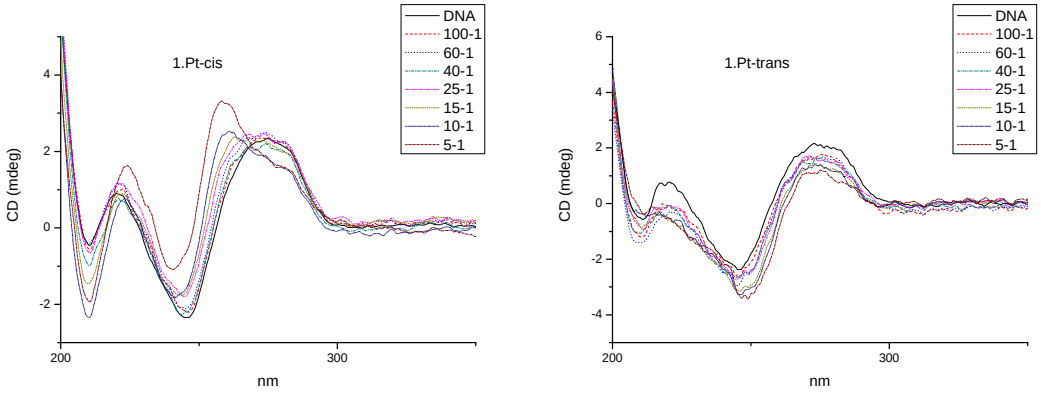


Figure 8.4 . corrected(complex CD signal substracted) ct-DNA CD titration with 1.Pt-cis and 1.Pt-trans.

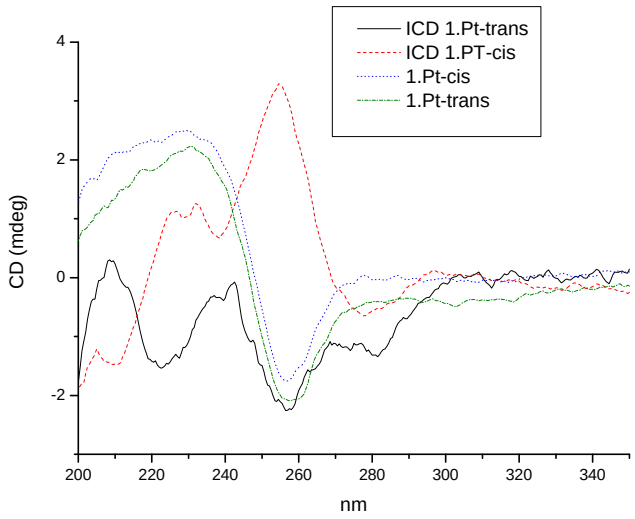


Figure 8.5 . ICD of ct-DNA CD titration with 1.Pt-cis and 1.Pt-trans.

9. PCR:

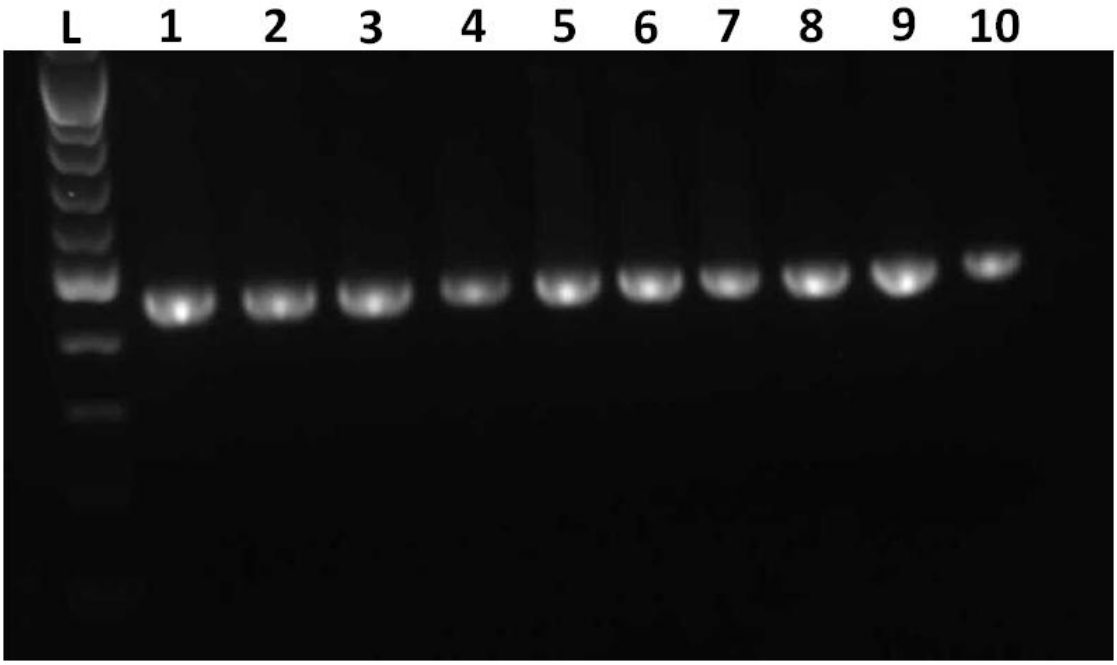


Figure 9.1. PCR in presence of 1.Pt-cis, py.Pt-cis and cisplatin after 1 hour incubation at 37ºC with pUC19. Lane L: 100 bp oligonucleotide ladder; Lane 1: control; Lanes 2-4: 5µM, 10µM, 25µM cisplatin; Lanes 5-7: 5µM, 10µM, 25µM **py.Pt**-*cis*; Lanes 8-10: 5µM, 10µM, 25µM **1.Pt**-*cis*. Band intensities, measured as percentage of the control at 25 µM for cisplatin, **py.Pt**-*cis* and **1.Pt**-*cis*: 67%, 75% and 73% respectively.

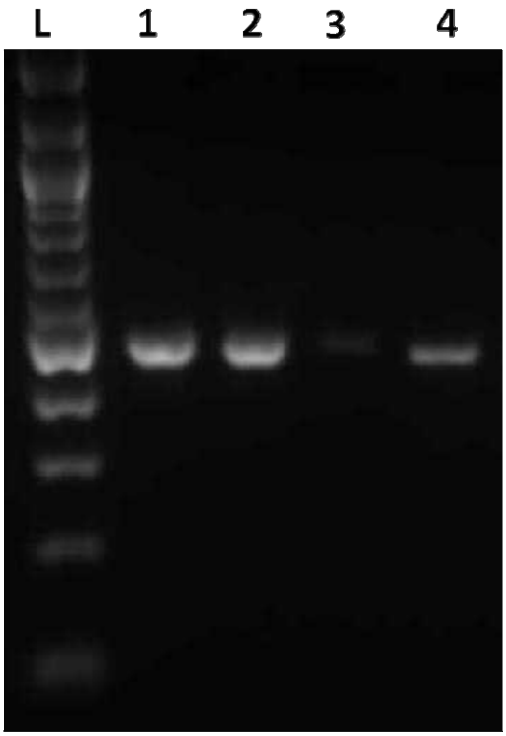


Figure 9.2. PCR in presence of cisplatin after 18 hour incubation at 37ºC with pUC19. Lane L: 100 bp oligonucleotide ladder; Lane 1: control; Lanes 2-4: 5µM, 10µM, 25µM cisplatin.

10. HMGB1/HSA Gel mobility assay:

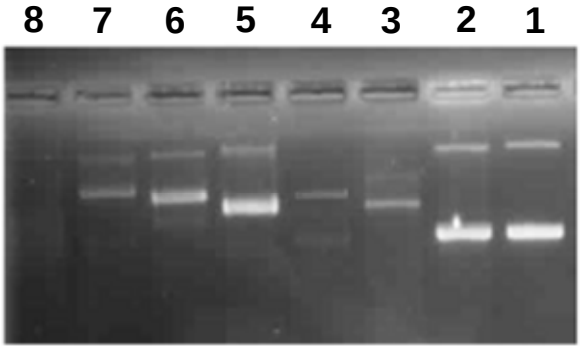


Figure 10.1. Gel mobility assay of linear pBR322 after 24 hour incubation at 37ºC with **1.Pt**-*cis*, **py.Pt**-*cis* and cisplatin and 1 hour incubation with HSA. Lane 1: linear pBR322 without pBR322; Lane 2: pBR322; Lane 3: 17.5 µM **py.Pt**-*cis*; Lane 4: 17.5 µM cisplatin; Lanes 5-8: 2.5µM, 7.5 µM, 12.5 µM, 17.5 µM **1.Pt**-*cis*.

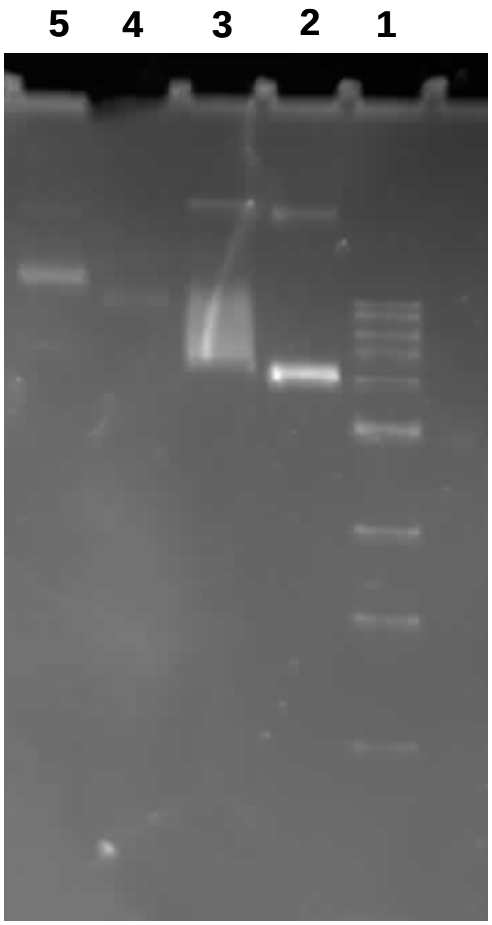


Figure 10.2. Gel mobility assay of linear pBR322 after 24 hour incubation at 37ºC with cisplatin and 1 hour incubation with HMGB1. Lane 1: linear pBR322; Lanes 2-4: 2.5μM, 7.5 μM, 12.5μM cisplatin.