Supplementary information

1. ESI-MS + 5’-GMP. TAE buffer:

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<th>[Pt(NH3)2(L)(OH2)]+-(H+) in TAE buffer/1mM sodium cacodylate buffer m/z</th>
<th>[Pt(NH3)2(L)(5’-GMP)]+ in TAE buffer/1mM sodium cacodylate buffer m/z</th>
<th>[Pt(NH3)2(L)(5’-GMP)]+ in TAE buffer m/z</th>
<th>[Pt(NH3)2(L)(OH2)]+-(H+) in sodium cacodylate buffer m/z</th>
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2. NMR + 5’-GMP:

Py.Pt-trans + GMP:

Figure 2.1 1H NMR spectra for Py.Pt-trans with 5’-GMP in 1mM sodium cacodylate buffer in D2O (pH 6.8) and 1:1 nucleotide:complex ratio. &, hydrolysis product.

Py.Pt-cis + GMP:

Figure 2.2 1H NMR spectra for Py.Pt-cis with 5’-GMP in 1mM sodium cacodylate buffer in D2O (pH 6.8) and 1:1 nucleotide:complex ratio.
3. NMR + 9-Ethylguanine:

Py.Pt-cis + 9 Ethyl Guanine:

Figure 3.1 ¹H NMR spectra for Py.Pt-cis with 9-EG in 1mM sodium cacodylate buffer in D₂O (pH 6.8) and 1:1 nucleotide:complex ratio.

Py.Pt-trans + 9 Ethyl Guanine:

Figure 3.2 ¹H NMR spectra for Py.Pt-trans and 9-EG in 1mM sodium cacodylate buffer in D₂O (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$_2$O (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$_2$O (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$_2$O (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$_2$O (pH 6.8) and 1:1 nucleotide:complex ratio.
1.Pt-trans Hydrolysis:

Figure 4.3 $^1H$ NMR spectra 1.Pt-trans hydrolysis in 1 mM sodium cacodylate buffer in D$_2$O (pH 6.8) and 1:1 nucleotide:complex ratio.

1.Pt-cis Hydrolysis:

Figure 4.4 $^1H$ NMR spectra for 1.Pt-cis hydrolysis in 1 mM sodium cacodylate buffer in D$_2$O (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
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 $LD'$ 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 $LD'$ of the complex 4.Pt-cis with ct-DNA.
Figure 6.12 The LD / absorbance spectra, change in LD versus DNA:complex ratio and $LD^*$ 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
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 37°C 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 37°C with cisplatin and 1 hour incubation with HMGB1. Lane 1: linear pBR322; Lanes 2-4: 2.5µM, 7.5 µM, 12.5µM cisplatin.