Supplementary information

1. Spectroscopy of Complexes:

1.1. 1

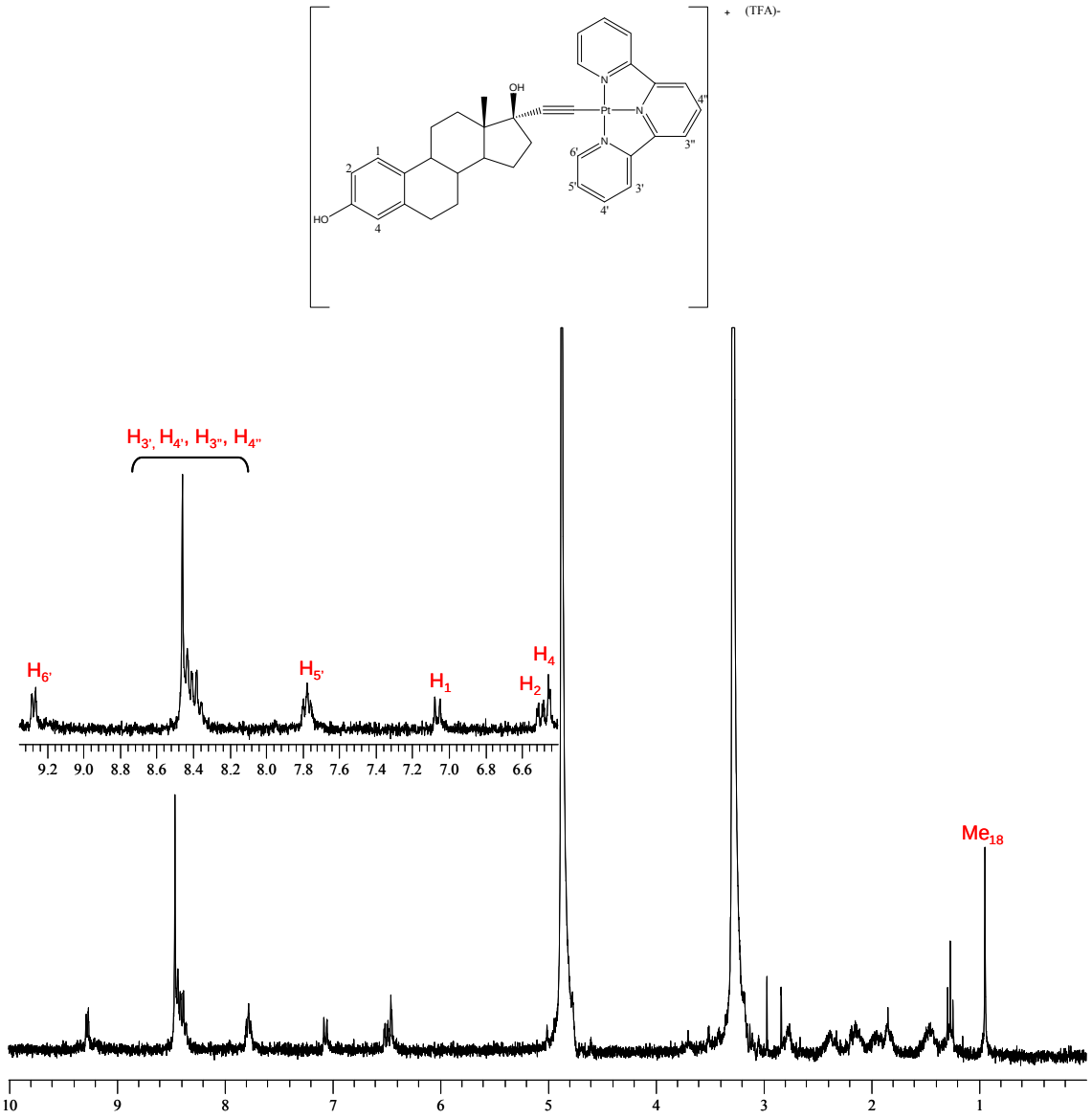


Figure 1.1.1. ^{1}H-NMR of **1** in a mixture of deuterated water:acetonitrile (1:1).

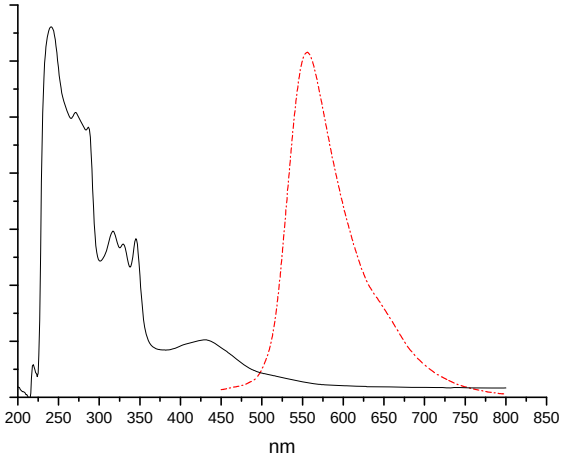


Figure 1.1.2. UV/Vis and Emission spectra of **1** (25 μM) in dichloromethane. λ_{exc}=425nm.

1.2. 2

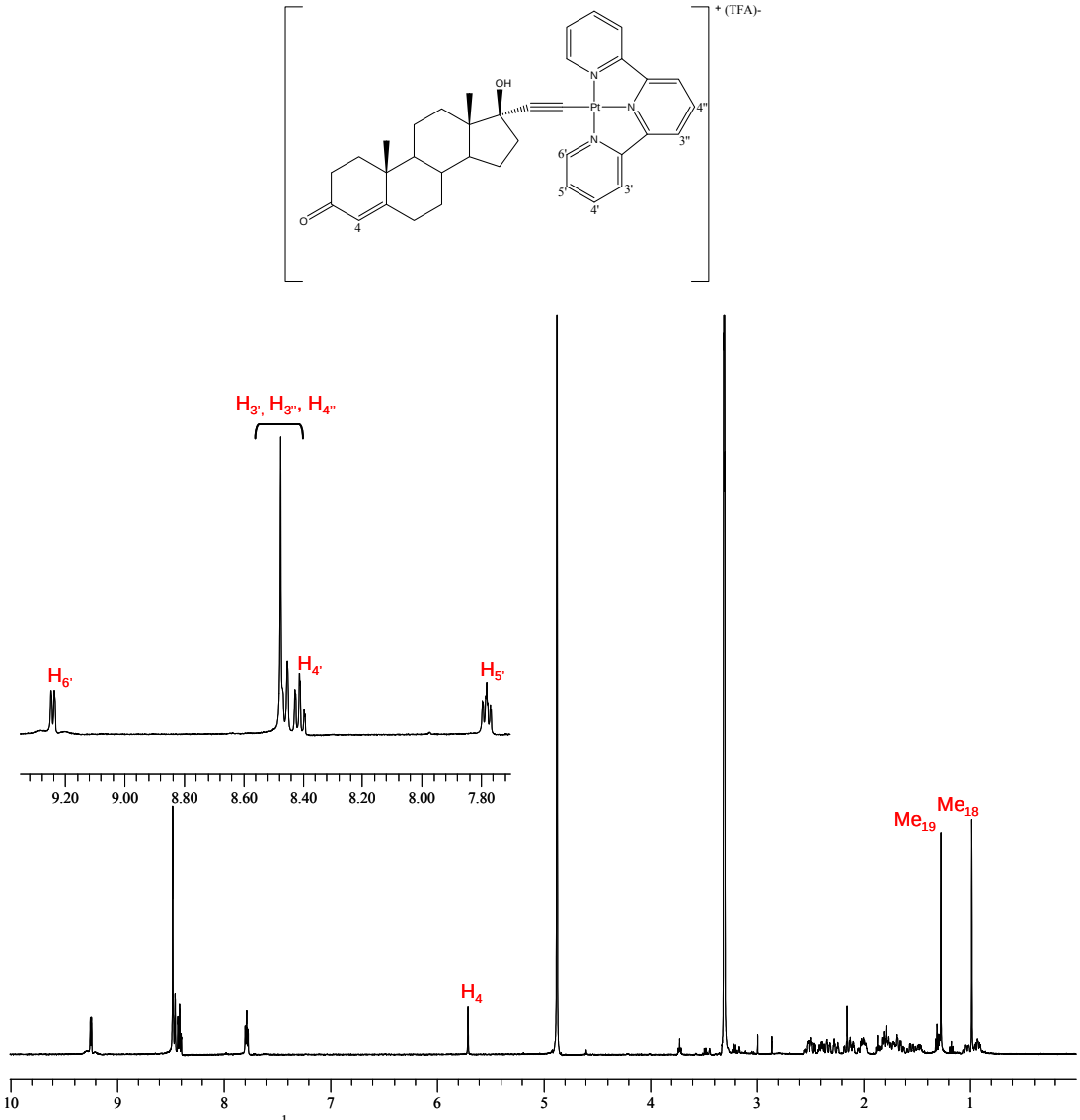


Figure 1.2.1. ^{1}H-NMR of **2** in a mixture of deuterated water:acetonitrile (1:1).

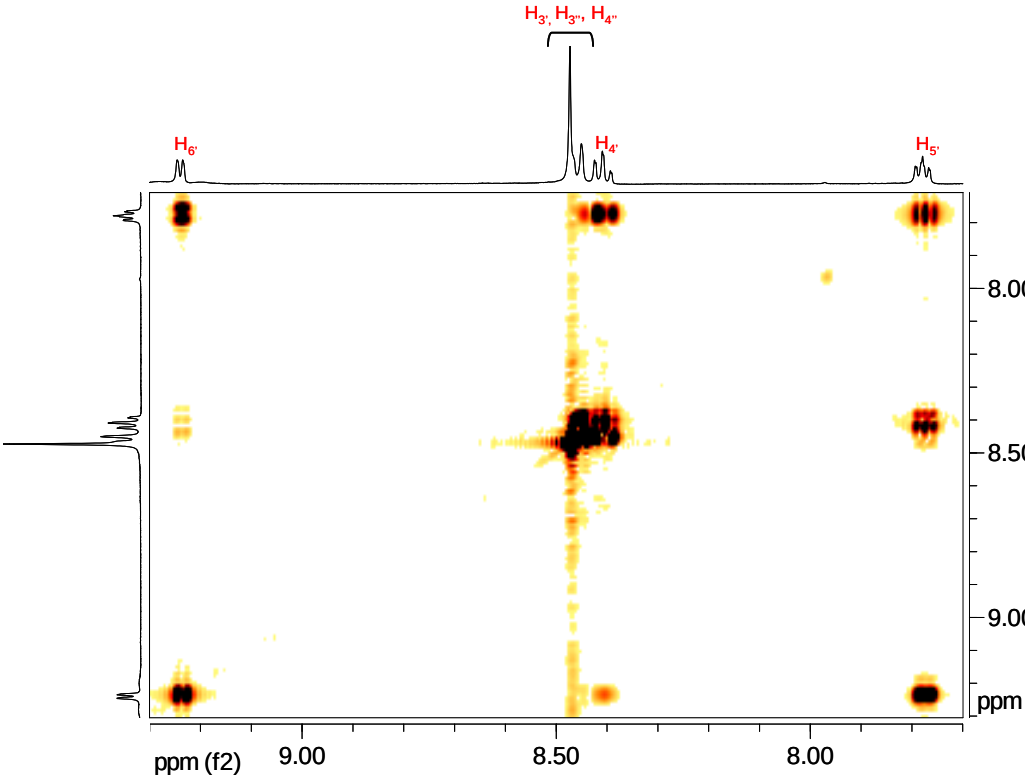


Figure 1.2.2. 2D-COSY ^{1}H-NMR of **2** in a mixture of deuterated water:acetonitrile (1:1).

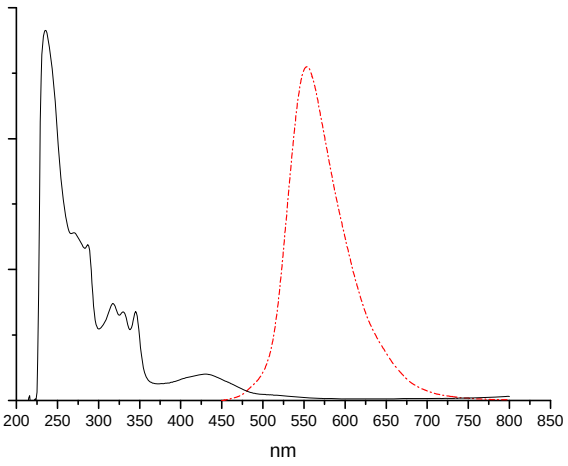


Figure 3.10. UV/Vis and Emission spectra of **2** (25 μM) in dichloromethane. λ_{exc}=425nm.

1.3. 3

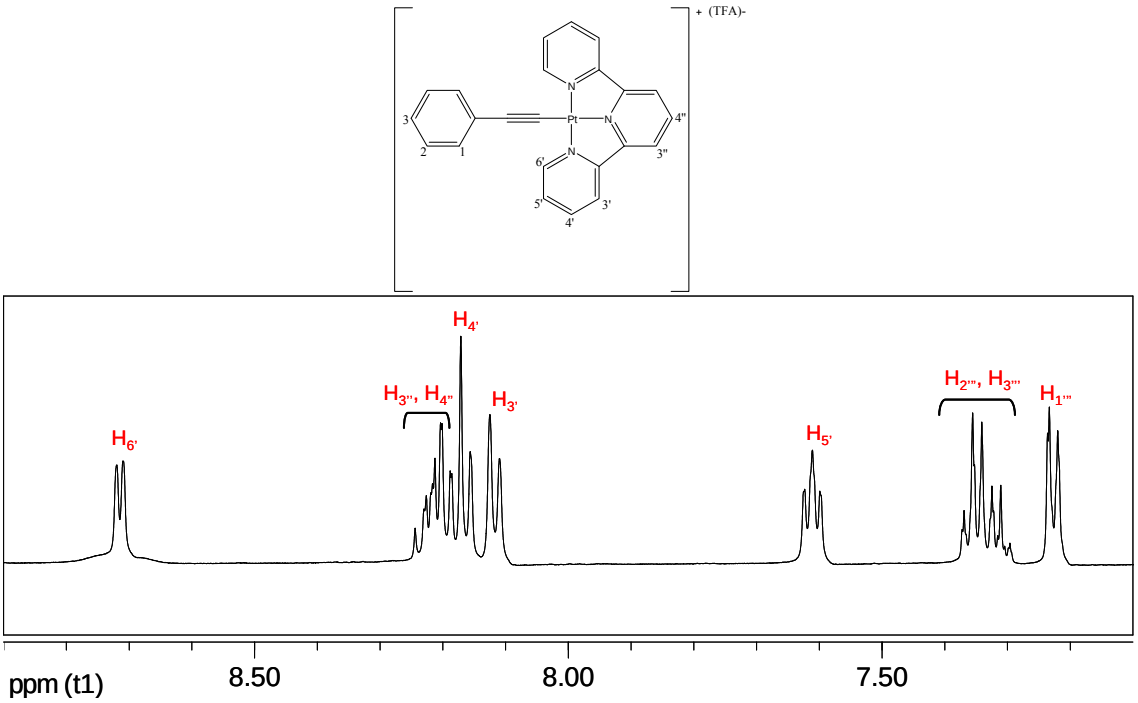


Figure 1.3.1. ^{1}H-NMR of **3** in a mixture of deuterated water:acetonitrile (1:1).

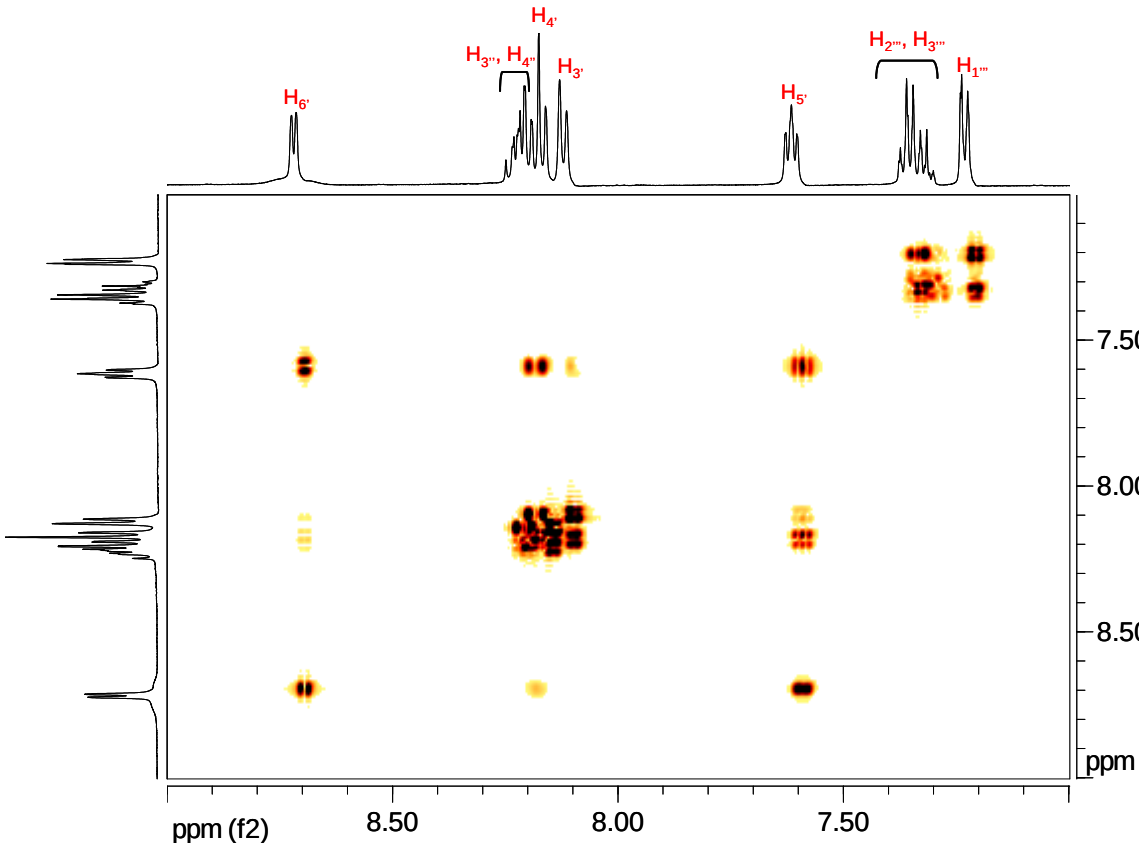


Figure 1.3.2. 2D-COSY ^{1}H-NMR of **3** in a mixture of deuterated water:acetonitrile (1:1).

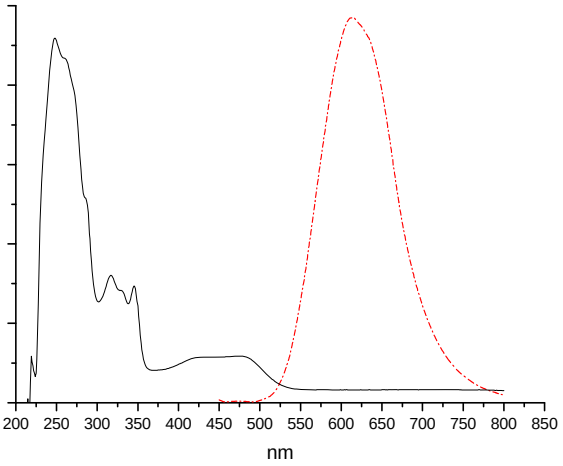
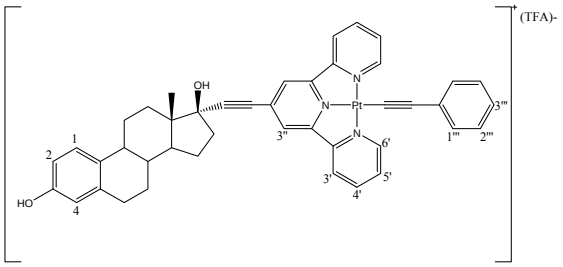


Figure 1.3.3. UV/Vis and Emission spectra of **3** (25 µM) in dichloromethane. λ_{exc}=480nm..

1.4 4:



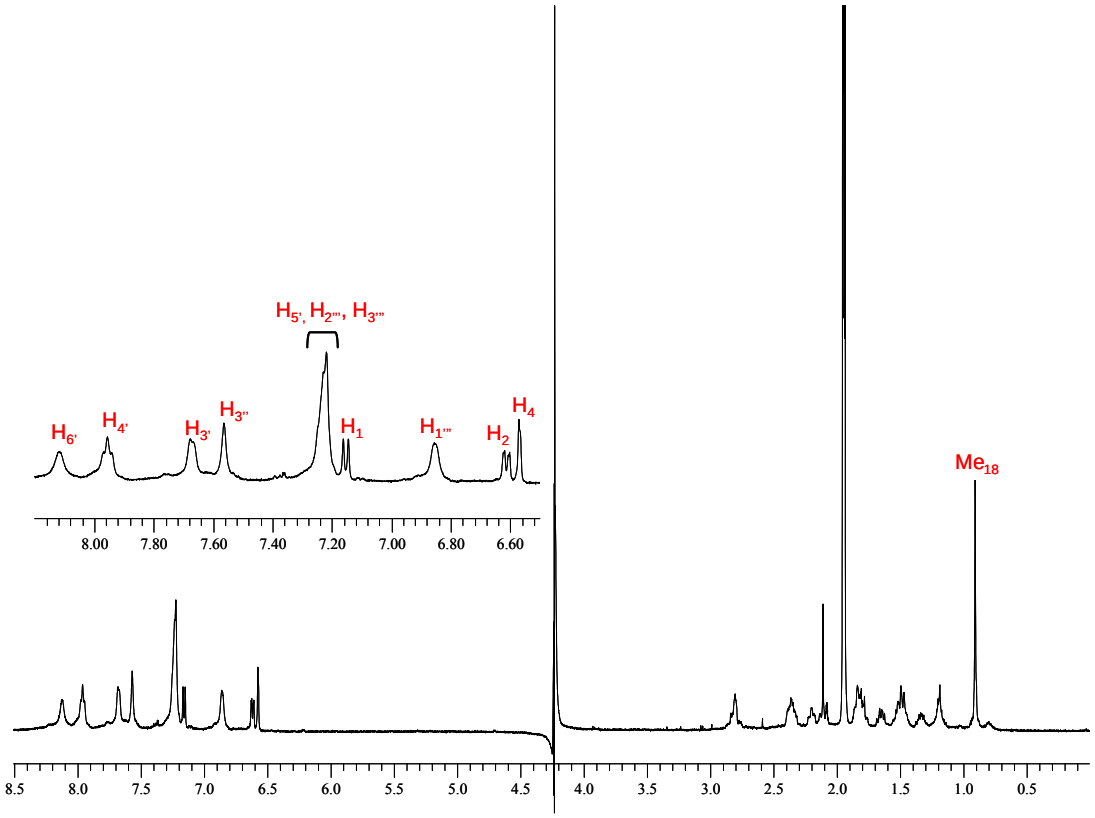


Figure 1.4.1. ^{1}H-NMR of **4** in a mixture of deuterated water:acetonitrile (1:1).

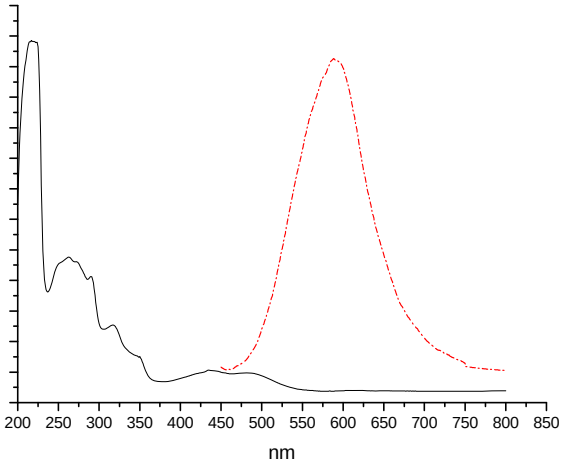
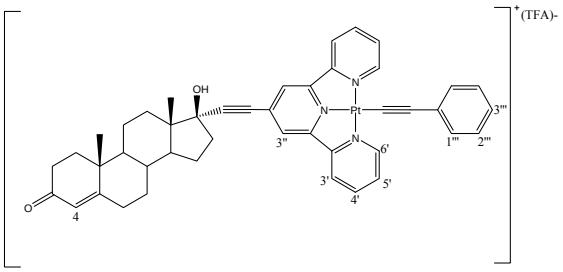


Figure 1.4.2. UV/Vis and Emission spectra of **4** (25 μM) in dichloromethane. λ_{exc}=480nm.

1.5 5:



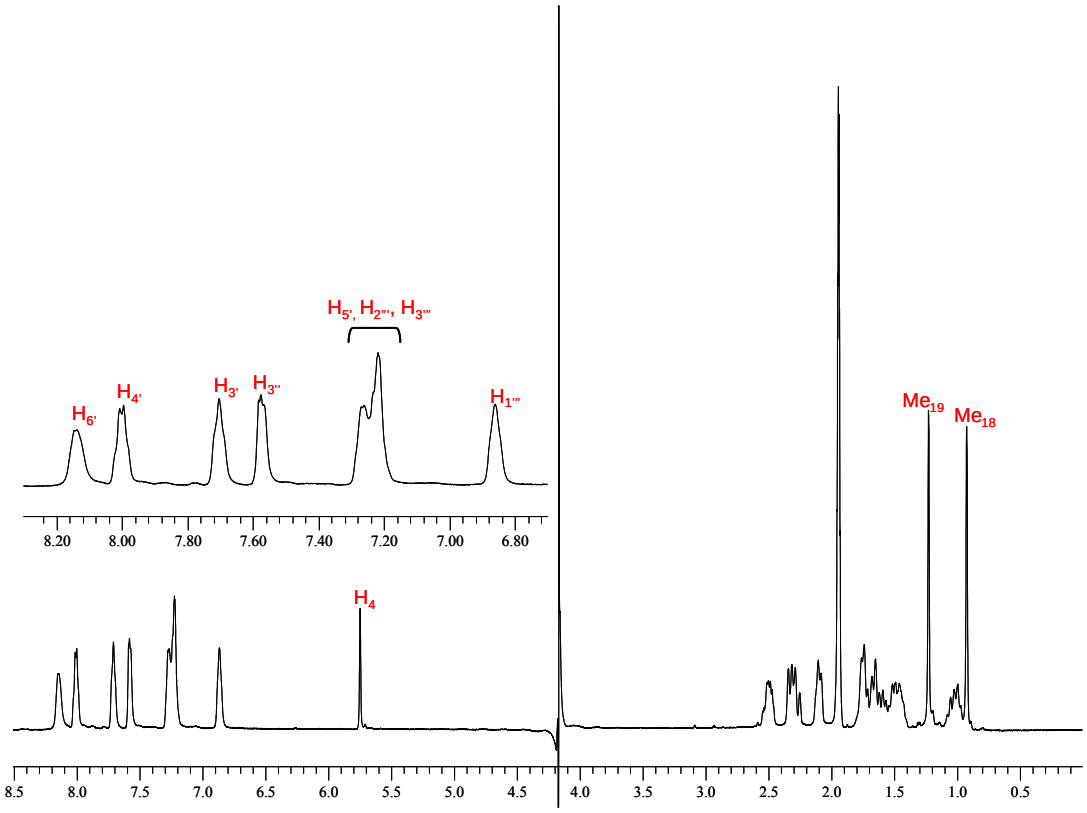


Figure 1.5.1. ^{1}H-NMR of **5** in a mixture of deuterated water:acetonitrile (1:1).

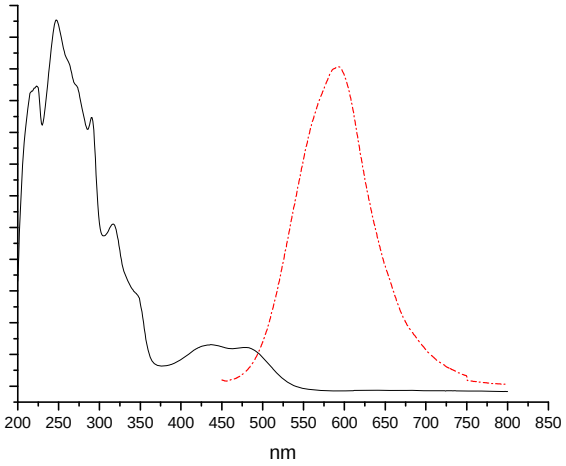


Figure 1.5.2. UV/Vis and Emission spectra of **5** (25 μM) in dichloromethane. λ_{exc}=480nm..

2. Cytotoxicity

Table 2.1. IC_{50} μM of synthesised complexes against Breast and ovarian cancer cell lines.

Molecule	T-47D	MDA-MB-231	SK-OV-3	A2780	A2780cisR	Rx[a]
1	15.4 ± 0.1	6.3 ± 1	19.3 ± 1.2	2.6 ± 0.7	5.9 ± 0.9	2.2
2	12.3 ± 1.9	11.4 ± 1.2	19.8 ± 2.6	4.3 ± 0.9	11.8 ± 1.8	2.8
3	2.1 ± 1.5	4± 1.4	15.5 ± 0.4			
4	52.2 ± 2.6	50.1± 5.9	83.8 ± 4.2			
5	22.2 ± 2.9	30.5± 7.8	39.4 ± 9.1			
Cisplatin	28 ± 3	31.3 ± 4.7	11.2 ± 0.1	3.0 ± 0.5	12.8 ± 1.4	4.3

[a] Rx is ratio of IC50 for a compound in A2780cisR compared to A2780. * indicate a oestradiol derivative.

3. Cellular uptake

	SK-OV-3			T-47D			MDA-MB-231		
	whole cell	cytoplasm	nuclei	whole cell	cytoplasm	nuclei	whole cell	cytoplasm	nuclei
1	159 ± 14	111 ± 11	41 ± 5	130	80 ± 19	30 ± 1	361 ± 23	61 ± 13	33 ± 14
2	474 ± 7	97 ± 8	28 ± 2	408 ± 26	53 ± 12	17 ± 1	287 ± 11	67 ± 5	26 ± 1
3	749	137 ± 7	129	204 ± 21	77	101 ± 0.3	630 ± 53	160 ± 6	160 ± 11
Cisplatin	25 ± 12	12 ± 2	1.4 ± 0.4	11 ± 2	5	0.2	9 ± 0.1	8 ± 1.6	2 ± 0.1

Table 3.1 pmoles of Pt in T-47D, SK-OV-3 and MDA-MB-231 per million cells after 3 hours of treatment with 30 μM of complexes.

4. Stability of complexes

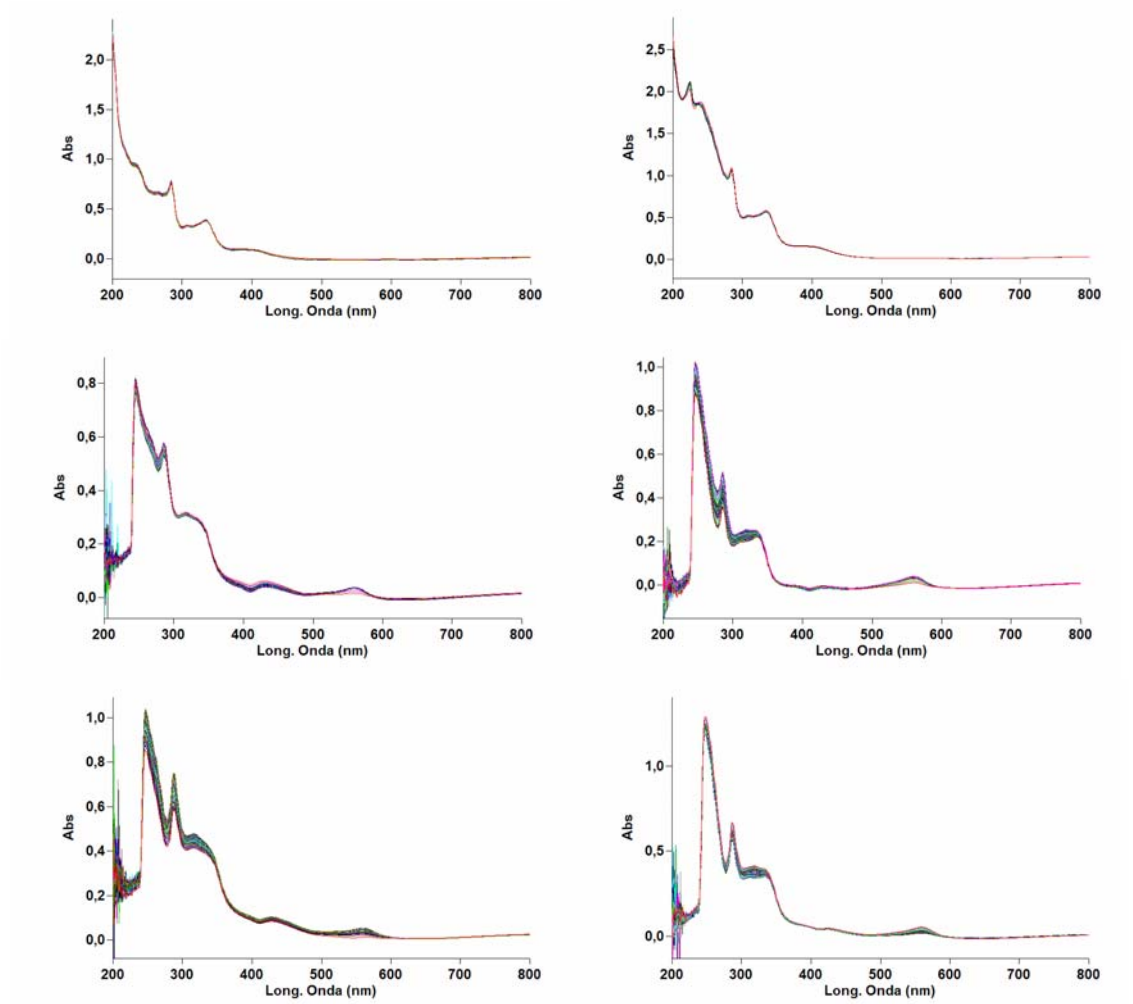


Figure 4.1. UV/Vis of **1** (left) and **2** (right) (50 μM) during 72h in water (top), RPMI 1640 (middle) and DMEM medium (bottom).

5 Ethidium bromide displacement

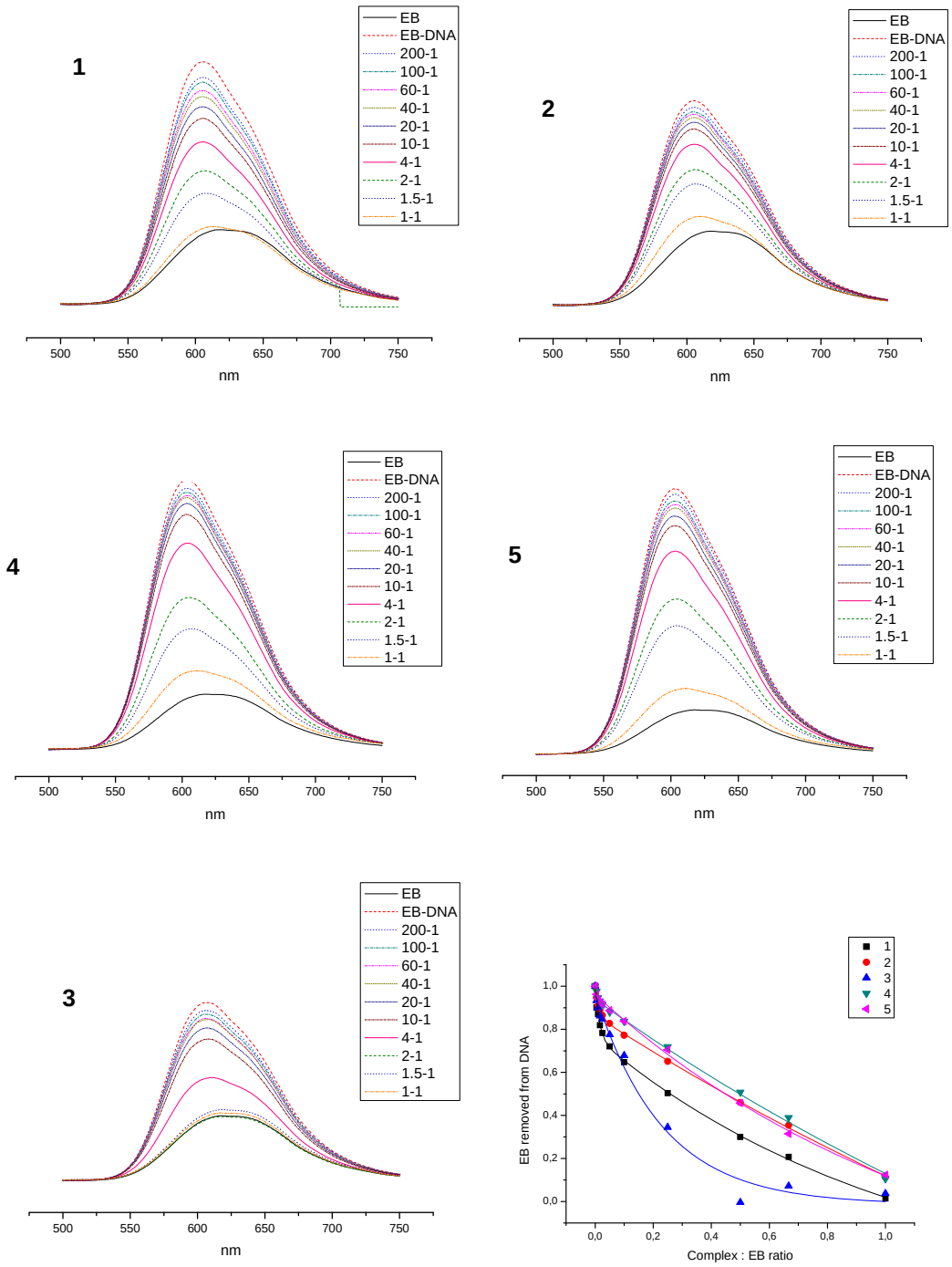


Figure 5.1. Displacement of ethidium bromide (15 μM) from ct-DNA (12 μM) by sinthesized complexes. Mixing ratios EB/complex are shown in the caption. λexc=480nm. Decreasing ratios of emission (bottom right).

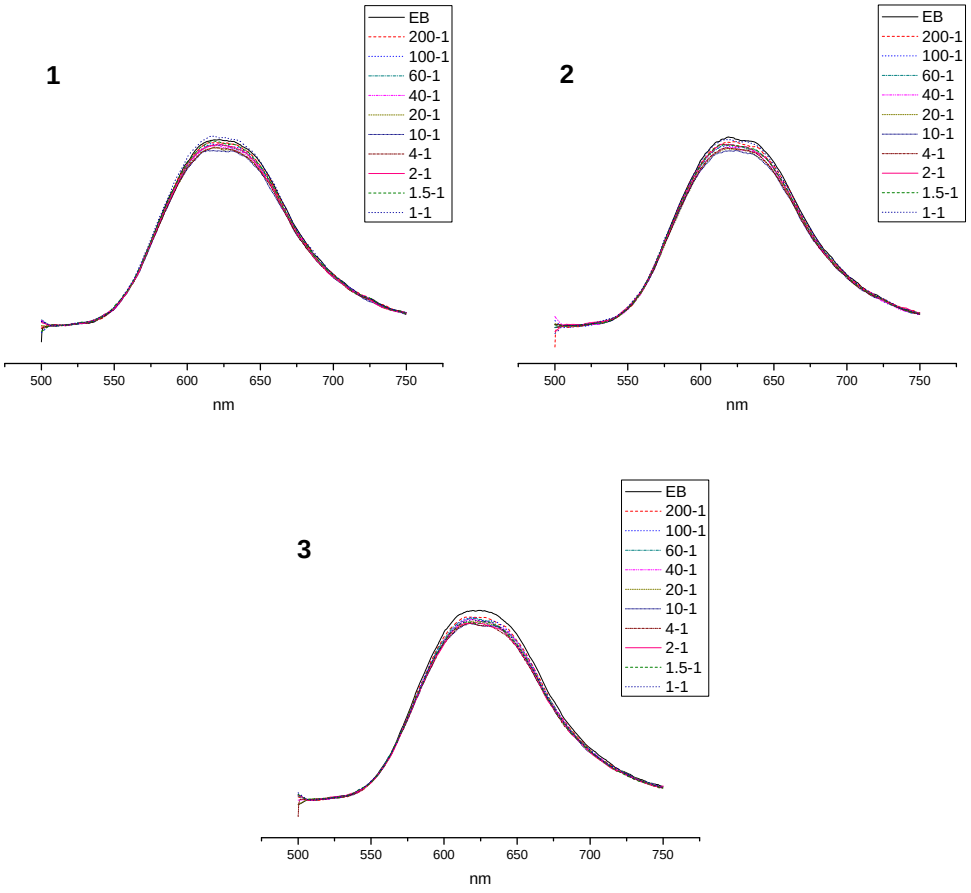


Figure 5.2. Effect on free ethidium bromide (15 μM) fluorescence by sinthesized complexes. Mixing ratios EB/complex are shown in the caption. λexc=480nm. Decreasing ratios of emission (bottom right).

6 Circular and linear Dichroism

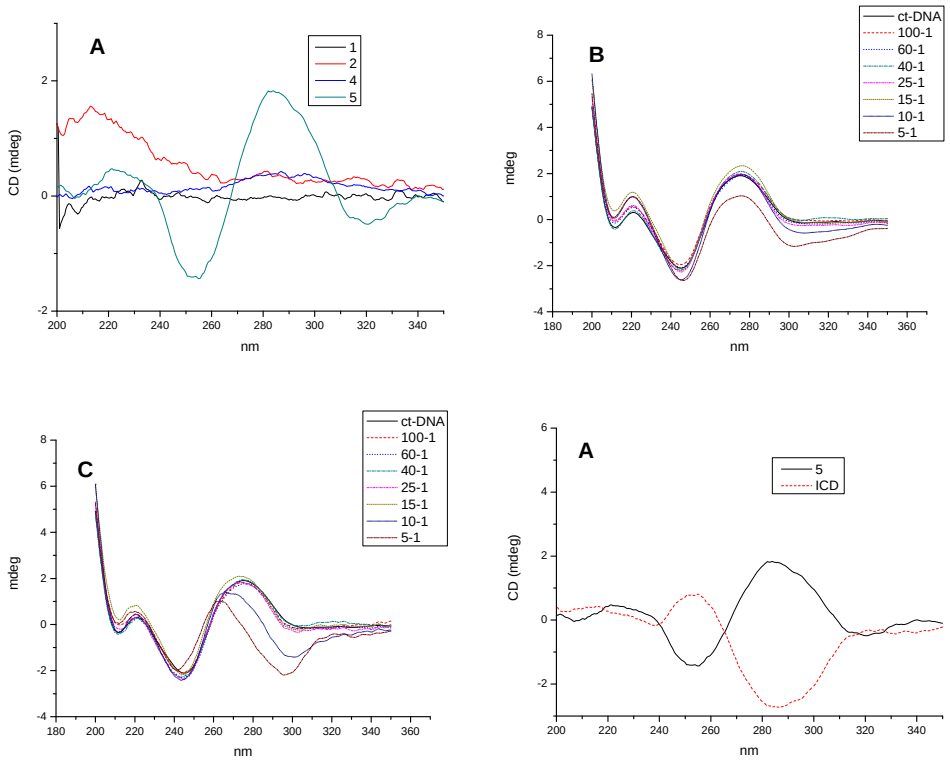


Figure 6.1. CD absorbance of the complexes at equivalent concentration to the 5-1 (DNA(bp):complex) titration point (A); ct-DNA titration with **5** (B); ct-DNA titration with **5** after subtraction of the CD absorbance of the free complex (C); CD absorbance spectrum and ICD signal at the 5-1 DNA(bp):complex point.

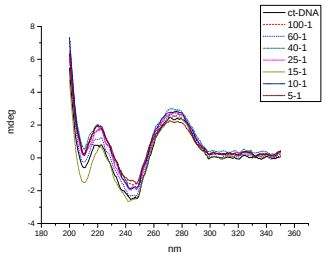
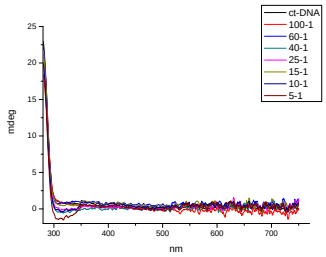
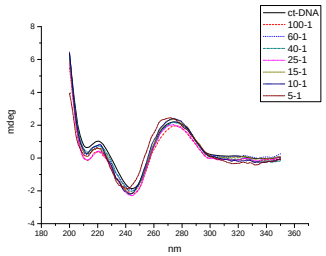
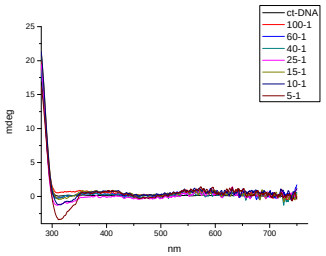
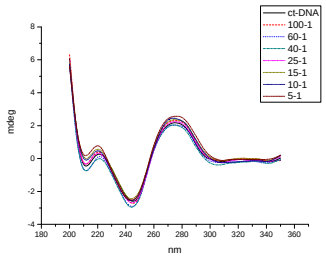
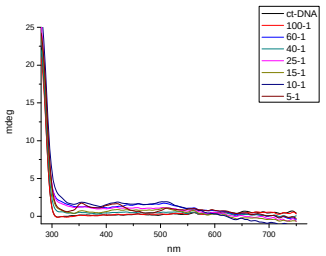
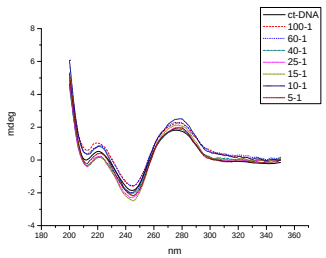
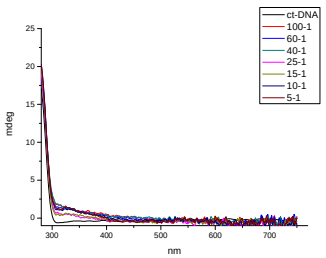
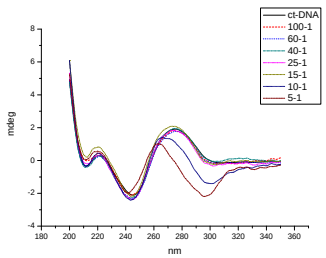
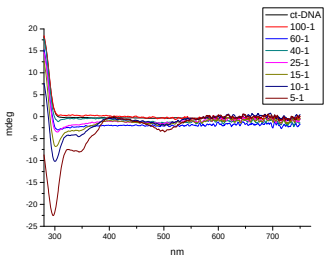
	CD	
	200-350nm	*280-750nm*
1		
2		
3		
4		
5		

Table 6.2. CD spectra of titration of ct-DNA(300 μM in 20 mM NaCl and 0.89 mM Sodium Cacodylate pH 6.8) with **1**, **2**, **3** (third), **4** and **5**. Corrected substracting CD absorbance of the complexes.

7 DNA Fluorescence tritation

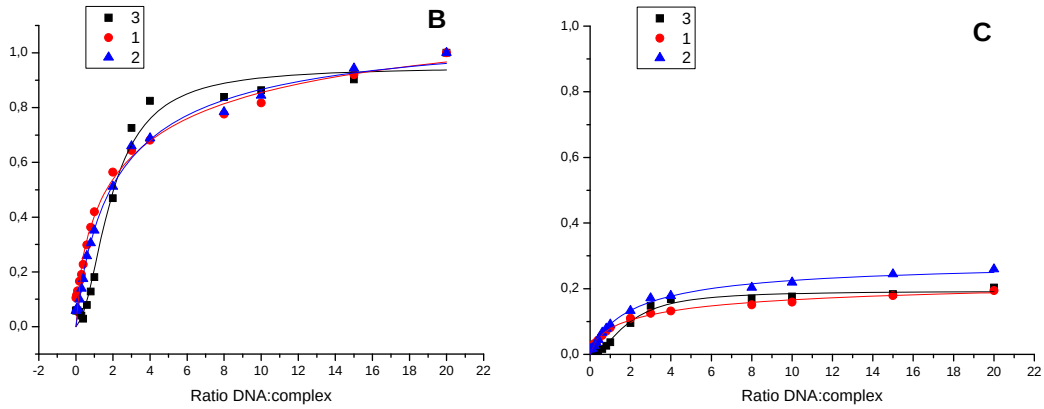


Figure 7.1. Fluorescence response of the complexes observed on addition of DNA (bp): normalized to maximun of fluorescence observed (A); related to maximun of fluorescence of the complexes at 25 μM in dichloromethane (B).