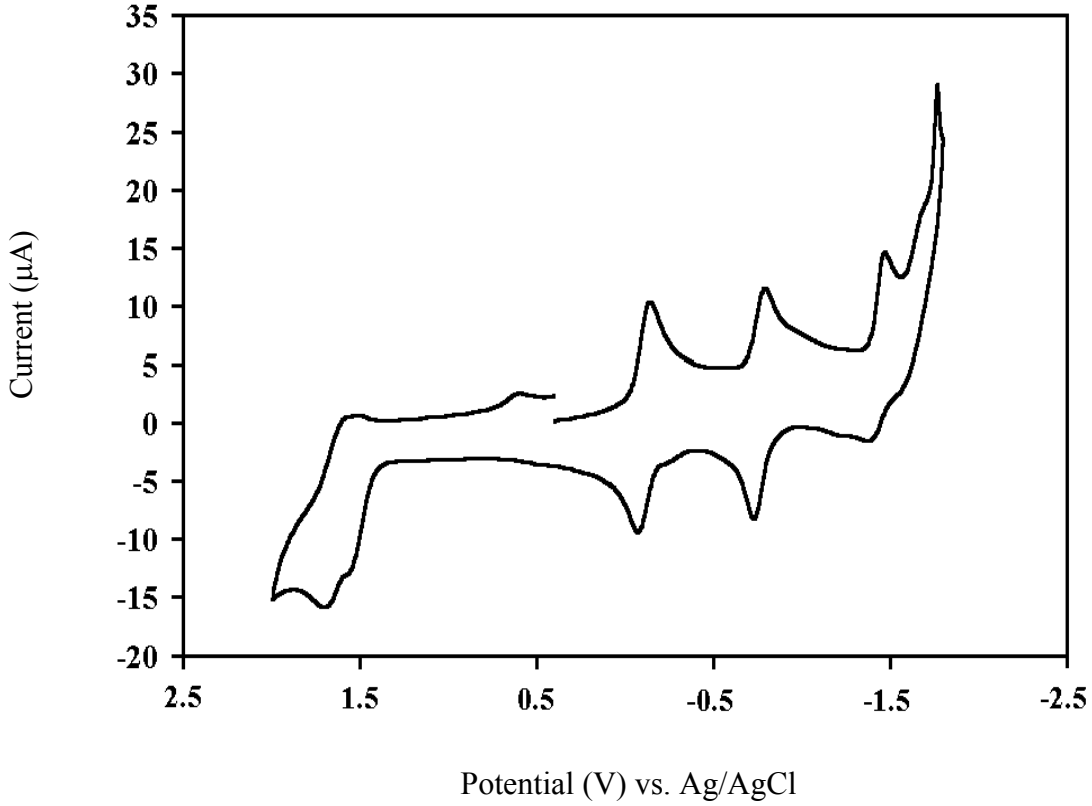
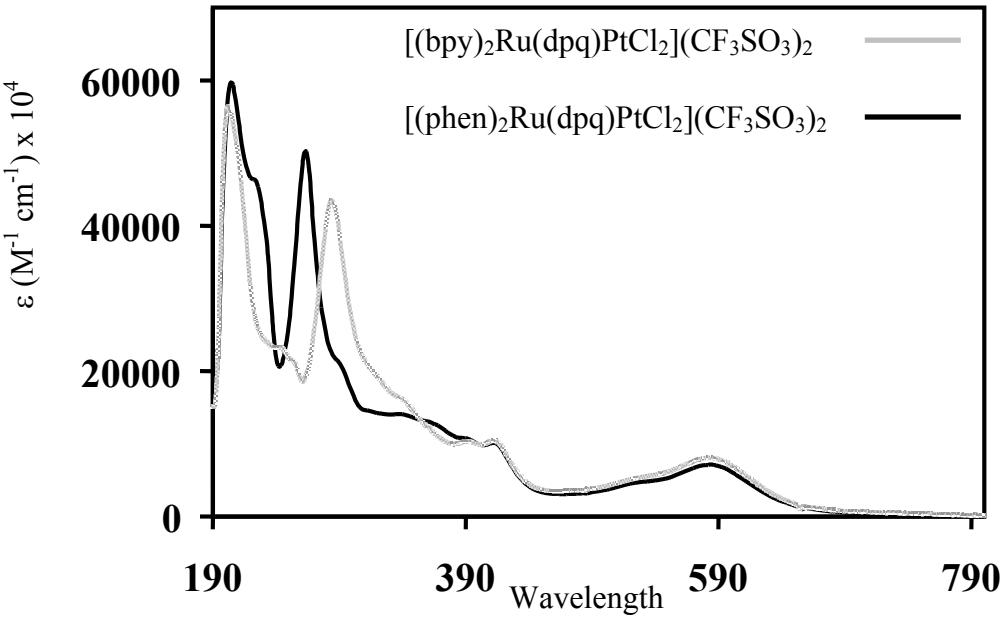
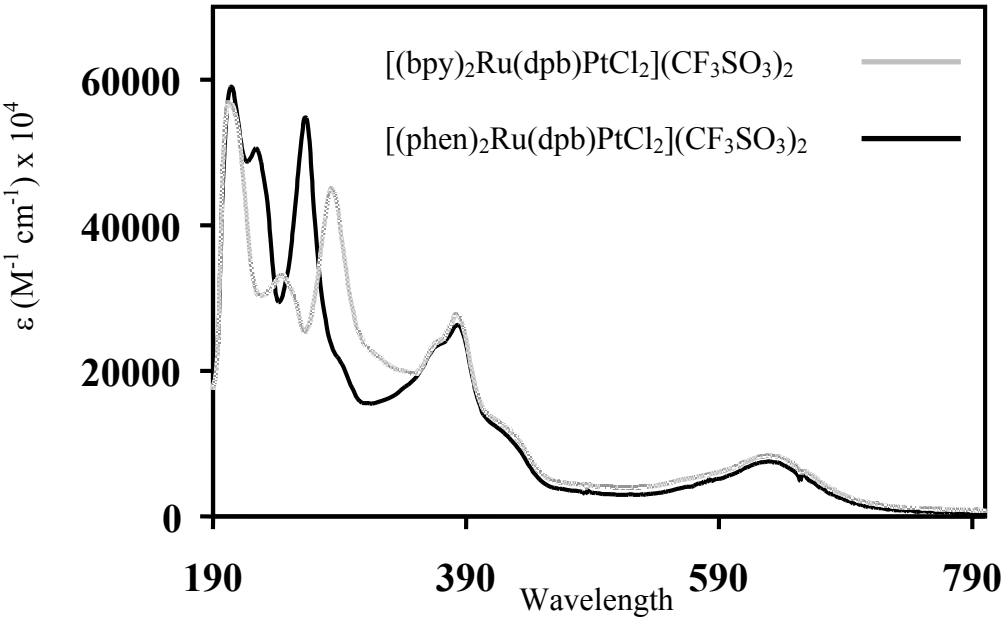
Appendices



A-1 Cyclic voltammagram for $[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ where phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline) in CH_3CN, 0.1 M TBAH supporting electrolyte.



A-2 Electronic absorption spectrum of $[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ and $[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ (where bpy = 2,2′-bipyridine, phen = 1,10-phenanthroline, dpb = 2,3-bis(2-pyridyl)benzoquinoxaline) in ddH_2O.



A-3 Electronic absorption spectrum of $[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ and $[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ (where bpy = 2,2′-bipyridine, phen = 1,10-phenanthroline, dpb = 2,3-bis(2-pyridyl)benzoquinoxaline) in ddH_2O.

Complex	$\Delta E_{1/2}$	E_{abs} MLCT (eV)	MLCT
$[(bpy)_2Ru(dpq)](CF_3SO_3)_2$	2.25	2.4	517
$[(bpy)_2Ru(dpb)](CF_3SO_3)_2$	2.09	2.3	550
$[(phen)_2Ru(dpq)](CF_3SO_3)_2$	2.23	2.3	530
$[(phen)_2Ru(dpb)](CF_3SO_3)_2$	2.09	2.2	552
$[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	1.87	2.1	588
$[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	1.75	1.9	638
$[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	1.87	2.1	588
$[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	1.75	1.9	638

A-4 Spectroscopic and electrochemical data used to construct the plot of the energies of the lowest energy absorption band (eV) vs. $E_{1/2}$ (V) shown in Figure 3.12.

DNA Band	Distance Traveled (mm)		
	Experiment		
	I	II	III
2037 kb (from MW standard)	33.0	31.0	32.0
Control	29.0	27.0	28.0
5 : 1 ratio	27.5	25.0	26.5
10: 1 ratio	28.0	25.5	27.0
20: 1 ratio	28.0	25.5	27.0
100: 1 ratio	28.5	26.0	27.5
200: 1 ratio	28.5	26.0	27.5
300: 1 ratio	28.5	26.0	27.5

B-1 Distance Traveled by DNA Bands (in mm) in a *cis*-$[Pt(NH_3)_2Cl_2]$ (cisplatin) – DNA interaction study. Measurements were made after native gel electrophoresis and gel photography were completed (see experimental section for full details on these techniques). Using a gel photograph, measurements were taken from the bottom of the gel loading well to the bottom of the DNA band using a standard metric ruler. Measurements were preformed in triplicate to assure reproducibility.

Experiment	Experiment			Average	Std. Dev.	% RSD
	I	II	III			
2037 kb band (from MW stds.)	1.00	1.00	1.00	1.00	0	0
Control	0.88	0.87	0.88	0.87	0.0032	0.37
5: 1 ratio	0.83	0.81	0.83	0.82	0.014	1.7
10: 1 ratio	0.85	0.82	0.84	0.84	0.014	1.7
20: 1 ratio	0.85	0.82	0.84	0.84	0.014	1.7
100: 1 ratio	0.86	0.84	0.86	0.85	0.013	1.6
200: 1 ratio	0.86	0.84	0.86	0.85	0.013	1.6
300: 1 ratio	0.86	0.84	0.86	0.85	0.013	1.6

B-2 R_f value determination for a *cis*-$[Pt(NH_3)_2Cl_2]$ (cisplatin) – DNA interaction study. R_f values were calculated by dividing the distance traveled by the metal-reacted DNA band (in mm) by the distance traveled by the 2.0 kb fragment of the MW standard (in mm). Calculations were preformed in triplicate to assure reproducibility.

DNA Band	Distance Traveled (mm)		
	Experiment		
	I	II	III
2037 kb (from MW standard)	32.0	31.0	33.0
Control	27.0	26.0	28.0
5 : 1 ratio	26.0	25.0	27.0
10: 1 ratio	26.5	25.5	27.5
20: 1 ratio	26.5	25.5	27.5
100: 1 ratio	27.0	26.0	28.0
200: 1 ratio	27.0	26.0	28.0
300: 1 ratio	27.0	26.0	28.0

B-3 Distance Traveled by DNA Bands (in mm) in a *trans*-{[$PtCl(NH_3)_2$]$_2$(μ-$H_2N(CH_2)_6NH_2$)}$(NO_3)_2$ (1,1/t,t) – DNA interaction study. Measurements were made after native gel electrophoresis and gel photography were completed (see experimental section for full details on these techniques). Using a gel photograph, measurements were taken from the bottom of the gel loading well to the bottom of the DNA band using a standard metric ruler. Measurements were preformed in triplicate to assure reproducibility.

Experiment	Experiment			Average	Std. Dev.	% RSD
	I	II	III			
2037 kb band (from MW stds.)	1.00	1.00	1.00	1.00	0	0
Control	0.84	0.84	0.85	0.84	0.0049	0.58
5: 1 ratio	0.81	0.81	0.82	0.81	0.0059	0.72
10: 1 ratio	0.83	0.82	0.83	0.83	0.0054	0.65
20: 1 ratio	0.83	0.82	0.83	0.83	0.0054	0.65
100: 1 ratio	0.84	0.84	0.85	0.84	0.0049	0.58
200: 1 ratio	0.84	0.84	0.85	0.84	0.0049	0.58
300: 1 ratio	0.84	0.84	0.85	0.84	0.0049	0.58

B-4 R_f value determination for a *trans*-{[$PtCl(NH_3)_2$]$_2$(μ-$H_2N(CH_2)_6NH_2$)}$(NO_3)_2$ (1,1/t,t) – DNA interaction study. R_f values were calculated by dividing the distance traveled by the metal-reacted DNA band (in mm) by the distance traveled by the 2.0 kb fragment of the MW standard (in mm). Calculations were preformed in triplicate to assure reproducibility.

DNA Band	Distance Traveled (mm)		
	Experiment		
	I	II	III
2037 kb (from MW standard)	32.0	31.0	30.0
Control	27.5	27.0	26.0
5 : 1 ratio	23.0	21.5	22.0
10: 1 ratio	25.0	23.5	23.0
20: 1 ratio	26.0	25.0	24.0
100: 1 ratio	27.0	26.5	25.0
200: 1 ratio	27.0	27.0	25.0
300: 1 ratio	27.5	27.0	26.0

B-5 Distance Traveled by DNA Bands (in mm) in a $[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ – DNA interaction study (where bpy = 2,2′-bipyridine, dpq = 2,3-bis(2-pyridyl)quinoxaline). Measurements were made after native gel electrophoresis and gel photography were completed (see experimental section for full details on these techniques). Using a gel photograph, measurements were taken from the bottom of the gel loading well to the bottom of the DNA band using a standard metric ruler. Measurements were preformed in triplicate to assure reproducibility.

Experiment	Experiment			Average	Std. Dev.	% RSD
	I	II	III			
2037 kb band (from MW stds.)	1.00	1.00	1.00	1.00	0	0
Control	0.86	0.87	0.87	0.87	0.0059	0.68
5: 1 ratio	0.72	0.69	0.73	0.72	0.020	2.8
10: 1 ratio	0.78	0.76	0.77	0.77	0.012	1.5
20: 1 ratio	0.81	0.81	0.80	0.81	0.006	0.78
100: 1 ratio	0.84	0.85	0.83	0.84	0.011	1.3
200: 1 ratio	0.84	0.87	0.83	0.85	0.019	2.3
300: 1 ratio	0.86	0.87	0.87	0.87	0.0059	0.68

B-6 R_f value determination for a $[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ – DNA interaction study (where bpy = 2,2′-bipyridine, dpq = 2,3-bis(2-pyridyl)quinoxaline). R_f values were calculated by dividing the distance traveled by the metal-reacted DNA band (in mm) by the distance traveled by the 2.0 kb fragment of the MW standard (in mm). Calculations were preformed in triplicate to assure reproducibility.

DNA Band	Distance Traveled (mm)		
	Experiment		
	I	II	III
2037 kb (from MW standard)	35.0	33.0	32.0
Control	30.0	28.5	27.0
5 : 1 ratio	26.0	24.0	22.5
10: 1 ratio	27.5	26.0	24.0
20: 1 ratio	28.5	27.0	25.0
100: 1 ratio	30.0	28.0	26.0
200: 1 ratio	30.0	28.0	26.5
300: 1 ratio	30.0	28.0	27.0

B-7 Distance Traveled by DNA Bands (in mm) in a $[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ – DNA interaction study (where bpy = 2,2′-bipyridine, dpb = 2,3-bis(2-pyridyl)benzoquinoxaline). Measurements were made after native gel electrophoresis and gel photography were completed (see experimental section for full details on these techniques). Using a gel photograph, measurements were taken from the bottom of the gel loading well to the bottom of the DNA band using a standard metric ruler. Measurements were preformed in triplicate to assure reproducibility.

Experiment	Experiment			Average	Std. Dev.	% RSD
	I	II	III			
2037 kb band (from MW stds.)	1.00	1.00	1.00	1.00	0	0
Control	0.86	0.86	0.84	0.85	0.010	1.2
5: 1 ratio	0.74	0.73	0.70	0.72	0.020	2.8
10: 1 ratio	0.79	0.79	0.75	0.77	0.021	2.7
20: 1 ratio	0.81	0.82	0.78	0.80	0.020	2.5
100: 1 ratio	0.86	0.85	0.81	0.84	0.024	2.8
200: 1 ratio	0.86	0.85	0.83	0.84	0.015	1.8
300: 1 ratio	0.86	0.85	0.84	0.85	0.0068	0.80

B-8 R_f value determination for a $[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ – DNA interaction study (where bpy = 2,2′-bipyridine, dpq = 2,3-bis(2-pyridyl)benzoquinoxaline). R_f values were calculated by dividing the distance traveled by the metal-reacted DNA band (in mm) by the distance traveled by the 2.0 kb fragment of the MW standard (in mm). Calculations were preformed in triplicate to assure reproducibility.

DNA Band	Distance Traveled (mm)		
	Experiment		
	I	II	III
2037 kb (from MW standard)	34.5	33.0	30.0
Control	30.0	28.5	25.5
5 : 1 ratio	25.0	23.5	21.0
10: 1 ratio	26.5	25.0	23.0
20: 1 ratio	28.0	26.5	24.0
100: 1 ratio	29.0	28.0	25.0
200: 1 ratio	29.5	28.0	25.5
300: 1 ratio	30.0	28.5	25.5

B-9 Distance Traveled by DNA Bands (in mm) in a $[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ – DNA interaction study (where phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline). Measurements were made after native gel electrophoresis and gel photography were completed (see experimental section for full details on these techniques). Using a gel photograph, measurements were taken from the bottom of the gel loading well to the bottom of the DNA band using a standard metric ruler. Measurements were preformed in triplicate to assure reproducibility.

Experiment	Experiment			Average	Std. Dev.	% RSD
	I	II	III			
2037 kb band (from MW stds.)	1.00	1.00	1.00	1.00	0	0
Control	0.87	0.86	0.85	0.86	0.010	1.2
5: 1 ratio	0.72	0.71	0.70	0.71	0.012	1.7
10: 1 ratio	0.77	0.76	0.77	0.76	0.0057	0.75
20: 1 ratio	0.81	0.80	0.80	0.80	0.0060	0.75
100: 1 ratio	0.84	0.85	0.83	0.84	0.0076	0.90
200: 1 ratio	0.86	0.85	0.85	0.85	0.0035	0.41
300: 1 ratio	0.87	0.86	0.85	0.86	0.010	1.2

B-10 R_f value determination for a $[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ – DNA interaction study (where phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline). R_f values were calculated by dividing the distance traveled by the metal-reacted DNA band (in mm) by the distance traveled by the 2.0 kb fragment of the MW standard (in mm). Calculations were preformed in triplicate to assure reproducibility.

DNA Band	Distance Traveled (mm)		
	Experiment		
	I	II	III
2037 kb (from MW standard)	32.0	33.0	33.0
Control	27.0	28.5	28.0
5 : 1 ratio	22.0	23.0	22.5
10: 1 ratio	23.5	24.5	24.0
20: 1 ratio	24.5	26.0	25.5
100: 1 ratio	26.0	28.0	27.0
200: 1 ratio	26.0	28.0	27.0
300: 1 ratio	26.0	28.0	27.0

B-11 Distance Traveled by DNA Bands (in mm) in a $[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ – DNA interaction study (where phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)benzo- quinoxaline). Measurements were made after native gel electrophoresis and gel photography were completed (see experimental section for full details on these techniques). Using a gel photograph, measurements were taken from the bottom of the gel loading well to the bottom of the DNA band using a standard metric ruler. Measurements were preformed in triplicate to assure reproducibility.

Experiment	Experiment			Average	Std. Dev.	% RSD
	I	II	III			
2037 kb band (from MW stds.)	1.00	1.00	1.00	1.00	0	0
Control	0.84	0.86	0.85	0.85	0.010	1.2
5: 1 ratio	0.69	0.70	0.68	0.69	0.0077	1.1
10: 1 ratio	0.73	0.74	0.73	0.73	0.0076	1.0
20: 1 ratio	0.77	0.79	0.77	0.78	0.011	1.5
100: 1 ratio	0.81	0.85	0.82	0.83	0.019	2.3
200: 1 ratio	0.81	0.85	0.82	0.83	0.019	2.3
300: 1 ratio	0.81	0.85	0.82	0.83	0.019	2.3

B-12 Rf value determination for a $[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ – DNA interaction study (where phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)benzoquinoxaline). R_f values were calculated by dividing the distance traveled by the metal-reacted DNA band (in mm) by the distance traveled by the 2.0 kb fragment of the MW standard (in mm). Calculations were preformed in triplicate to assure reproducibility.

Ratio	Integrated Density Value (IDV), Ethidium Fluorescence			Average IDV	Std. Dev. IDV	% RSD, IDV
	Experiment					
	I	II	III			
Control	42032	48160	47034	4.6×10^4	3261	7.1
5: 1	42264	46440	42822	4.4×10^4	2148	4.9
10: 1	43216	49880	45630	4.6×10^4	3374	7.3
20: 1	42032	49880	45630	4.6×10^4	3929	8.6
100: 1	42264	49880	44928	4.6×10^4	3708	8.1
200: 1	43808	44720	45630	4.5×10^4	911	2.0
300: 1	44400	48160	44928	4.6×10^4	2036	4.4

C-1 Gel densitometry data for *cis*-$[Pt(NH_3)_2Cl_2]$ (cisplatin). All data was collected utilizing 6/30 exposure, white setting = 255, black setting = 0, gamma = 1. Numerical data is the quantitation of the ethidium bromide fluorescence of the DNA, represented as the integrated density value (IDV). The "ratio" column refers to the specific DNA bp: mc ratio examined. The designation I, II, III refers to the experiment number. The "average" column refers to the average IDV for each DNA bp: mc ratio. The "Std. Dev." column refers to the standard deviation of all IDV values for each DNA bp: mc ratio examined. The "%RSD" column refers to the percent relative standard deviation for each DNA bp: mc ratio examined.

Ratio	Integrated Density Value (IDV), Ethidium Fluorescence			Average IDV	Std. Dev. IDV	% RSD, IDV
	Experiment					
	I	II	III			
Control	55860	51744	42066	5.0×10^4	7081	14.2
5: 1	56840	48510	39852	4.8×10^4	8495	17.6
10: 1	54880	50666	40590	4.9×10^4	7343	15.1
20: 1	53900	49588	42804	4.9×10^4	5594	11.5
100: 1	55860	52822	42804	5.0×10^4	6832	13.5
200: 1	49000	53900	44280	4.9×10^4	4810	9.8
300: 1	86840	52822	42804	5.1×10^4	7229	14.2

C-2 Gel densitometry data for *trans*-$\{[PtCl(NH_3)_2]_2(\mu\text{-}H_2N(CH_2)_6NH_2)\}(NO_3)_2$ (1,1/t,t). All data was collected utilizing 6/30 exposure, white setting = 255, black setting = 0, gamma = 1. Numerical data is the quantitation of the ethidium bromide fluorescence of the DNA, represented as the integrated density value (IDV). The "ratio" column refers to the specific DNA bp: mc ratio examined. The designation I, II, III refers to the experiment number. The "average" column refers to the average IDV for each DNA bp: mc ratio. The "Std. Dev." column refers to the standard deviation of all IDV values for each DNA bp: mc ratio examined. The "%RSD" column refers to the percent relative standard deviation for each DNA bp: mc ratio examined.

Ratio	Integrated Density Value (IDV), Ethidium Fluorescence			Average IDV	Std. Dev. IDV	% RSD, IDV
	Experiment					
	I	II	III			
Control	39852	38700	25789	3.5×10^4	7808	22.4
5: 1	5166	4644	4403	4.7×10^3	390	8.2
10: 1	14022	14706	11322	1.3×10^4	1789	13.4
20: 1	22878	19350	17612	2.0×10^4	2683	13.5
100: 1	36900	28638	23902	3.0×10^4	6578	22.1
200: 1	37638	29412	25160	3.1×10^4	6344	20.6
300: 1	38376	30960	25160	3.2×10^4	6624	21.0

C-3 Gel densitometry data for $[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$, where bpy = 2,2′-bipyridine and dpq = 2,3-bis(2-pyridyl)quinoxaline. All data was collected utilizing 6/30 exposure, white setting = 255, black setting = 0, gamma = 1. Numerical data is the quantitation of the ethidium bromide fluorescence of the DNA, represented as the integrated density value (IDV). The "ratio" column refers to the specific DNA bp: mc ratio examined. The designation I, II, III refers to the experiment number. The "average" column refers to the average IDV for each DNA bp: mc ratio. The "Std. Dev." column refers to the standard deviation of all IDV values for each DNA bp: mc ratio examined. The "%RSD" column refers to the percent relative standard deviation for each DNA bp: mc ratio examined.

Ratio	Integrated Density Value (IDV), Ethidium Fluorescence			Average IDV	Std. Dev. IDV	% RSD, IDV
	Experiment					
	I	II	III			
Control	45684	42750	35112	4.1×10^4	5458	13.3
5: 1	6788	6840	5852	6.5×10^3	551	8.5
10: 1	21150	20520	15048	1.9×10^4	3356	17.8
20: 1	32994	27360	29260	3.0×10^4	2866	9.6
100: 1	43146	35910	39292	4.0×10^4	3621	9.2
200: 1	45684	41040	39292	4.2×10^4	3304	7.9
300: 1	49068	44460	40964	4.5×10^4	4065	9.1

C-4 Gel densitometry data for $[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$, where bpy = 2,2′-bipyridine and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline. All data was collected utilizing 6/30 exposure, white setting = 255, black setting = 0, gamma = 1. Numerical data is the quantitation of the ethidium bromide fluorescence of the DNA, represented as the integrated density value (IDV). The "ratio" column refers to the specific DNA bp: mc ratio examined. The designation I, II, III refers to the experiment number. The "average" column refers to the average IDV for each DNA bp: mc ratio. The "Std. Dev." column refers to the standard deviation of all IDV values for each DNA bp: mc ratio examined. The "%RSD" column refers to the percent relative standard deviation for each DNA bp: mc ratio examined.

Ratio	Integrated Density Value (IDV), Ethidium Fluorescence			Average IDV	Std. Dev. IDV	% RSD, IDV
	Experiment					
	I	II	III			
Control	37800	34020	43605	3.8×10^4	4828	12.5
5: 1	6048	5292	5355	5.6×10^3	420	7.5
10: 1	15876	15120	20655	1.7×10^4	3001	17.4
20: 1	25704	26460	33660	2.9×10^4	4392	15.4
100: 1	36288	37044	47430	4.0×10^4	6226	15.5
200: 1	34776	37044	46665	4.0×10^4	6312	16.0
300: 1	36288	39312	49725	4.2×10^4	7049	16.9

C-5 Gel densitometry data for $[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$, where phen = 1,10-phenanthroline and dpq = 2,3-bis(2-pyridyl)quinoxaline. All data was collected utilizing 6/30 exposure, white setting = 255, black setting = 0, gamma = 1. Numerical data is the quantitation of the ethidium bromide fluorescence of the DNA, represented as the integrated density value (IDV). The "ratio" column refers to the specific DNA bp: mc ratio examined. The designation I, II, III refers to the experiment number. The "average" column refers to the average IDV for each DNA bp: mc ratio. The "Std. Dev." column refers to the standard deviation of all IDV values for each DNA bp: mc ratio examined. The "%RSD" column refers to the percent relative standard deviation for each DNA bp: mc ratio examined.

Ratio	Integrated Density Value (IDV), Ethidium Fluorescence			Average IDV	Std. Dev. IDV	% RSD, IDV
	Experiment					
	I	II	III			
Control	31160	35532	36288	3.4×10^4	2768	8.1
5: 1	2280	3024	4536	3.3×10^3	1150	35.0
10: 1	9880	12852	15120	1.3×10^4	2628	20.8
20: 1	19760	24948	26460	2.4×10^4	3514	14.8
100: 1	33440	37044	35532	3.5×10^4	1810	5.1
200: 1	32680	39312	37044	3.6×10^4	3371	9.3
300: 1	33440	37800	37044	3.6×10^4	2330	6.5

C-6 Gel densitometry data for $[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$, where phen = 1,10-phenanthroline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline. All data was collected utilizing 6/30 exposure, white setting = 255, black setting = 0, gamma = 1. Numerical data is the quantitation of the ethidium bromide fluorescence of the DNA, represented as the integrated density value (IDV). The "ratio" column refers to the specific DNA bp: mc ratio examined. The designation I, II, III refers to the experiment number. The "average" column refers to the average IDV for each DNA bp: mc ratio. The "Std. Dev." column refers to the standard deviation of all IDV values for each DNA bp: mc ratio examined. The "%RSD" column refers to the percent relative standard deviation for each DNA bp: mc ratio examined.

Experiment	Average IDV	Std. Dev.
$[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	4.1×10^4	5457.6
$[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	3.5×10^4	7808.0
$[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	3.4×10^4	2768.3
$[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	3.8×10^4	4828.0
cisplatin	4.6×10^4	3261.9
1,1/ t,t	5.0×10^4	7081.4
Average	4.1×10^4	13510

C-7 Average IDV values for control samples obtained from metal-DNA experiments shown in C-1 through C-6, where bpy = 2,2′-bipyridine, phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline). The "experiment" column refers to the respective metal-DNA interaction experiment from which the control IDV was obtained. The "Average IDV" column indicates the average integrated density value for the control, obtained from Tables 1-6. The "Std. Dev." column refers to the standard deviation of all IDV values for each DNA bp: mc ratio examined.

Experiment	Average	Std.dev.	% of Control	Percent std. dev., % of control
$[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	6.5×10^3	550.8	16	0.82
$[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	4.7×10^3	390.0	12	0.82
$[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	3.3×10^3	1149.6	8.1	0.89
$[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	5.7×10^3	419.5	14	0.82
cisplatin	4.4×10^4	2148.3	107	0.82
1,1/ t,t	4.8×10^4	8494.5	119	0.83

C-8 Average IDV values from metal-DNA experiments shown in C-1 through C-6, (where bpy = 2,2′-bipyridine, phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)), 5: 1 DNA bp: mc ratio. The "experiment" column refers to the respective metal-DNA interaction experiment from which the IDV was obtained. The "average IDV" column indicates the average integrated density value for the 5: 1 ratio. The "% of control " column indicates the average IDV value divided by the average IDV value for the control (shown in Table 7). The "Std. dev." column refers to the standard deviation of the average IDV values. The "Percent std. dev., % of control" column refers to the standard deviation obtained for the "% of control" calculation.

Experiment	Average	Std.dev.	% of Control	Percent std. dev., % of control
$[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	1.9×10^4	3355.9	46	0.38
$[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	1.3×10^4	1789.3	33	0.36
$[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	1.3×10^4	2627.9	31	0.40
$[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	1.7×10^4	3001.3	42	0.38
cisplatin	4.6×10^4	3373.9	114	0.34
1,1/ t,t	4.9×10^4	7342.7	120	0.36

C-9 Average IDV values from metal-DNA experiments shown in C-1 through C-6 (where bpy = 2,2′-bipyridine, phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)), 10: 1 DNA bp: mc ratio. The "experiment" column refers to the respective metal-DNA interaction experiment from which the IDV was obtained. The "average IDV" column indicates the average integrated density value for the 10: 1 ratio. The "% of control " column indicates the average IDV value divided by the average IDV value for the control (shown in Table 7). The "Std. dev." column refers to the standard deviation of the average IDV values. The "Percent std. dev., % of control" column refers to the standard deviation obtained for the "% of control" calculation.

Experiment	Average	Std.dev.	% of Control	Percent Std. dev., % of control
$[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	3.0×10^4	2866.3	73	0.35
$[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	2.0×10^4	2683.2	49	0.36
$[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	2.4×10^4	3514.1	58	0.36
$[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	2.9×10^4	4391.5	70	0.37
cisplatin	4.6×10^4	3928.5	113	0.34
1,1/ t,t	4.9×10^4	5593.7	120	0.35

C-10 Average IDV values from metal-DNA experiments shown in C-1 through C-6 (where bpy = 2,2′-bipyridine, phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)), 20: 1 DNA bp: mc ratio. The "experiment" column refers to the respective metal-DNA interaction experiment from which the IDV was obtained. The "average IDV" column indicates the average integrated density value for the 20: 1 ratio. The "% of control " column indicates the average IDV value divided by the average IDV value for the control (shown in Table 7). The "Std. dev." column refers to the standard deviation of the average IDV values. The "Percent std. dev., % of control" column refers to the percent standard deviation obtained for the "percent % of control" calculation.

Experiment	Average	Std.dev.	% of Control	Percent std. dev., % of control
$[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	4.0×10^4	3620.6	97	0.34
$[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	3.0×10^4	6578.2	73	0.40
$[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	3.6×10^4	1809.8	87	0.34
$[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	4.0×10^4	6226.1	99	0.37
cisplatin	4.7×10^4	3707.7	113	0.34
1,1/ t,t	5.1×10^4	6831.9	124	0.36

C-11 Average IDV values from metal-DNA experiments shown in C-1 through C-6 (where bpy = 2,2′-bipyridine, phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)), 100: 1 DNA bp: mc ratio. The "experiment" column refers to the respective metal-DNA interaction experiment from which the IDV was obtained. The "average IDV" column indicates the average integrated density value for the 100: 1 ratio. The "% of control " column indicates the average IDV value divided by the average IDV value for the control (shown in Table 7). The "Std. dev." column refers to the standard deviation of the average IDV values. The "Percent std. dev., % of control" column refers to the percent standard deviation obtained for the "% of control" calculation.

Experiment	Average	Std.dev.	% of Control	Percent std. dev., % of control
$[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	4.2×10^4	3303.5	103	0.34
$[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	3.1×10^4	6343.6	76	0.39
$[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	3.6×10^4	3370.8	89	0.35
$[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	4.0×10^4	6312.1	97	0.37
cisplatin	4.5×10^4	911.0	109	0.33
1,1/ t,t	4.9×10^4	4810.3	120	0.35

C-12 Average IDV values from metal-DNA experiments shown in C-1 through C-6 (where bpy = 2,2′-bipyridine, phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)), 200: 1 DNA bp: mc ratio. The "experiment" column refers to the respective metal-DNA interaction experiment from which the IDV was obtained. The "average IDV" column indicates the average integrated density value for the 200: 1 ratio. The "% of control " column indicates the average IDV value divided by the average IDV value for the control (shown in Table 7). The "Std. dev." column refers to the standard deviation of the average IDV values. The "Percent std. dev., % of control" column refers to the percent standard deviation obtained for the "% of control" calculation.

Experiment	Average	Std.dev.	% of Control	Percent std. dev., % of control
$[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	4.5×10^4	4064.7	110	0.34
$[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	3.5×10^4	6624.4	77	0.39
$[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$	3.6×10^4	2329.9	89	0.34
$[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$	4.2×10^4	7049.0	103	0.37
cisplatin	4.6×10^4	2035.6	113	0.33
1,1/ t,t	5.1×10^4	7228.6	124	0.36

C-13 Average IDV values from metal-DNA experiments shown in C-1 through C-6 (where bpy = 2,2′-bipyridine, phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)), 300: 1 DNA bp: mc ratio. The "experiment" column refers to the respective metal-DNA interaction experiment from which the IDV was obtained. The "average IDV" column indicates the average integrated density value for the 300: 1 ratio. The "% of control " column indicates the average IDV value divided by the average IDV value for the control (shown in Table 7). The "Std. dev." column refers to the standard deviation of the average IDV values. The "Percent std. dev., % of control" column refers to the percent standard deviation obtained for the "% of control" calculation.

cis-$[Pt(NH_3)_2Cl_2]$		
Ratio, Ethidium Bromide: Metal Complex	Emission Intensity	% of Control Experiment
0 (control experiment, 100% ethidium bromide, no metal added)	99	100
100: 1	99	100
20: 1	98	99
10: 1	99	100
5: 1	98	99
1: 1	99	100

trans-$\{[PtCl(NH_3)_2]_2(\mu\text{-}H_2N(CH_2)_6NH_2)\}(NO_3)_2$ (1,1/t,t)		
Ratio, Ethidium Bromide: Metal Complex	Emission Intensity	% of Control Experiment
0 (control experiment, 100% ethidium bromide , no metal added)	101	100
100: 1	100	99
20: 1	100	99
10: 1	101	100
5: 1	100	99
1: 1	100	99

D-1 Emission data for ethidium bromide in the presence of *cis*-$[Pt(NH_3)_2Cl_2]$ (cisplatin) (top) and *trans*-$\{[PtCl(NH_3)_2]_2(\mu\text{-}H_2N(CH_2)_6NH_2)\}(NO_3)_2$ (1,1/t,t) (bottom) in ddH_2O at RT.

$[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$		
Ratio, Ethidium Bromide: Metal Complex	Emission Intensity	% of Control Experiment
0 (control experiment, 100% ethidium bromide, no metal added)	109	100
100: 1	108	99
20: 1	99	91
10: 1	93	85
5: 1	83	76
1: 1	28	26

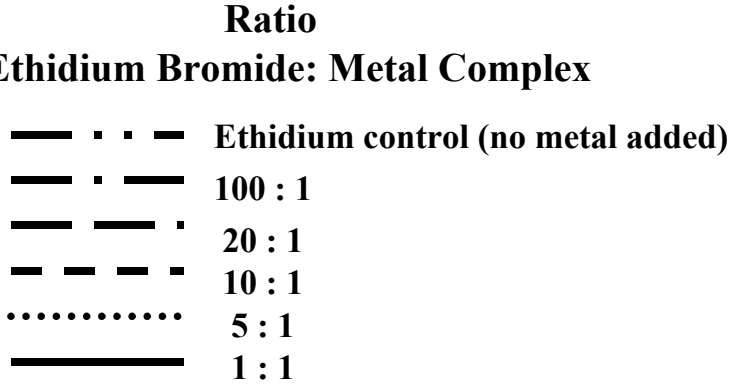
$[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$		
Ratio, Ethidium Bromide: Metal Complex	Emission Intensity	% of Control Experiment
0 (control experiment, 100% ethidium bromide, no metal added)	114	100
100: 1	111	97
20: 1	101	89
10: 1	100	88
5: 1	90	79
1: 1	40	35

D-2 Emission data for ethidium bromide in the presence of $[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ (top) and $[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ (bottom) in ddH_2O at RT (where bpy = 2,2′-bipyridine, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)).

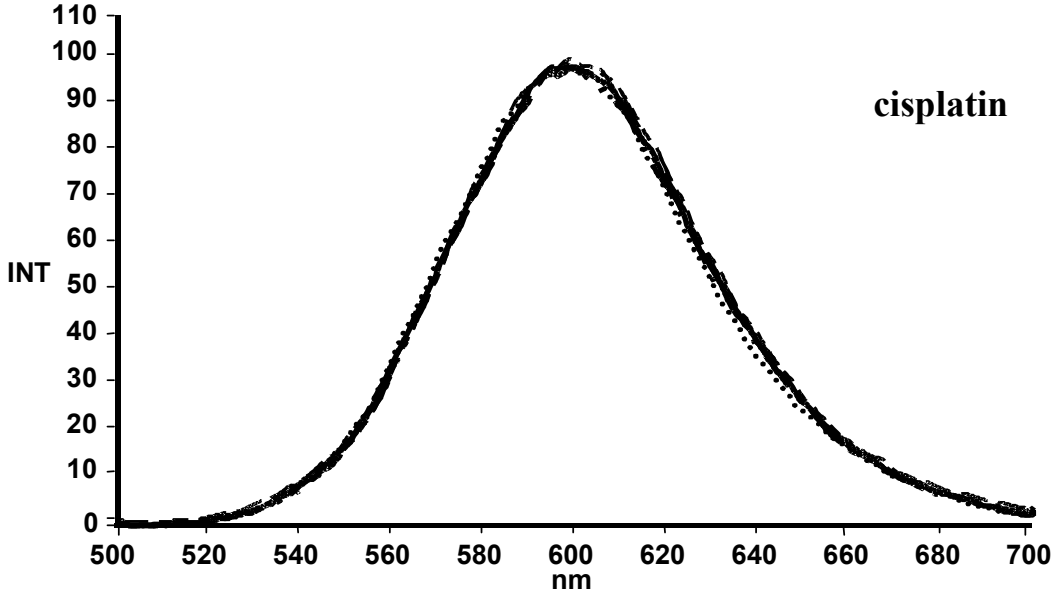
$[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$		
Ratio, Ethidium Bromide: Metal Complex	Emission Intensity	% of Control Experiment
0 (control experiment, 100% ethidium bromide, no metal added)	114	100
100: 1	111	97
20: 1	101	89
10: 1	100	88
5: 1	90	79
1: 1	40	35

$[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$		
Ratio, Ethidium Bromide: Metal Complex	Emission Intensity	% of Control Experiment
0 (control experiment, 100% ethidium bromide, no metal added)	112	100
100: 1	111	99
20: 1	107	96
10: 1	102	91
5: 1	90	80
1: 1	33	29

D-3 Emission data for ethidium bromide in the presence of $[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ (top) and $[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ (bottom) in ddH_2O at RT (where phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)).



D-4 **(following page)**. Ethidium bromide quenching study for *cis*-$[Pt(NH_3)_2Cl_2]$ (cisplatin) and *trans*-$\{[PtCl(NH_3)_2]_2(\mu\text{-}H_2N(CH_2)_6NH_2)\}(NO_3)_2$ (1,1/t,t). Graph of fluorescence intensity versus wavelength, examined at 100, 20, 10 and 5 metal complex: ethidium bromide ratios. For comparison purposes, a solution containing 100% ethidium bromide was also examined under the same conditions.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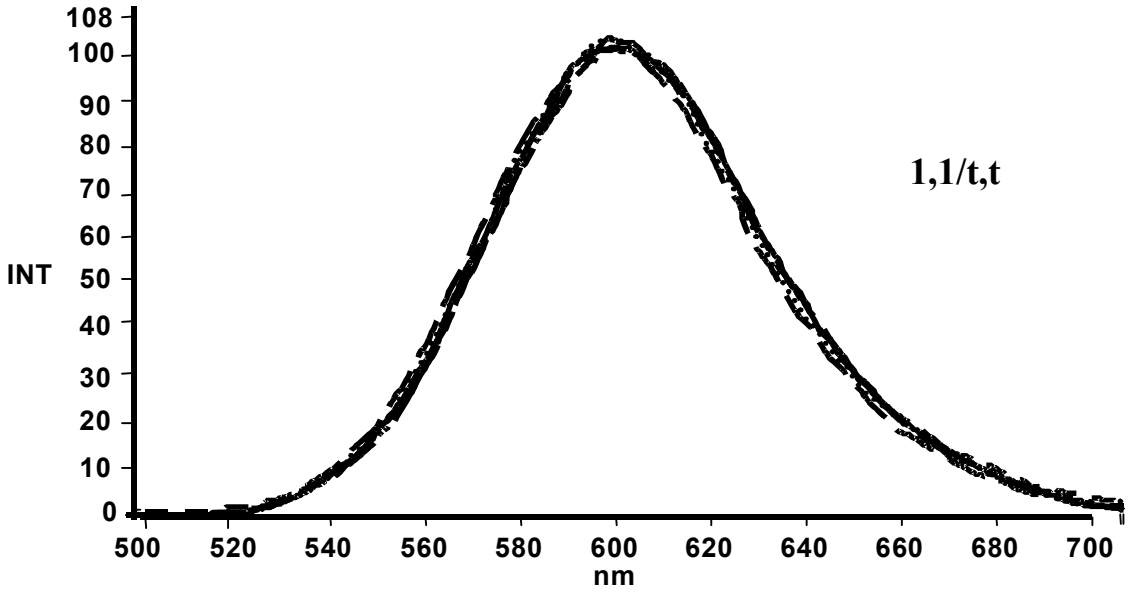
1,1/t,t
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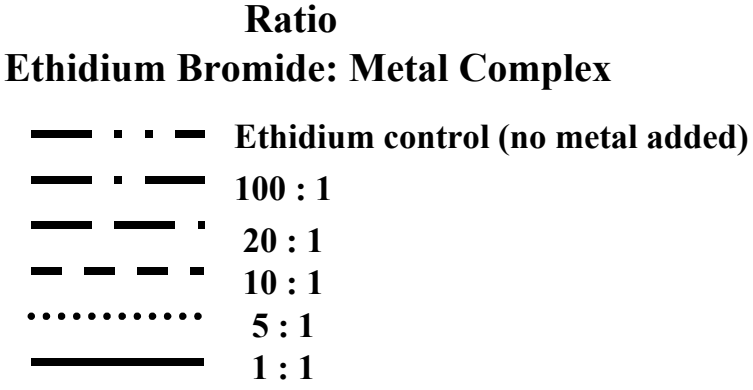
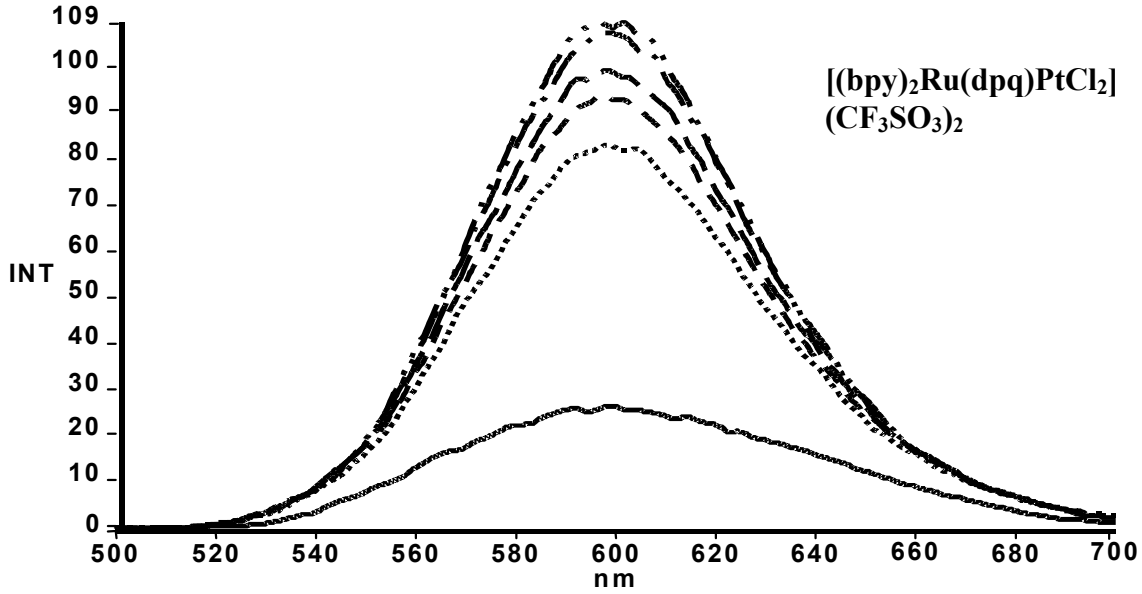


D-5 **(following page)**. Ethidium bromide quenching study for $[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ and $[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ (where bpy = 2,2′-bipyridine, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)). Graph of fluorescence intensity versus wavelength, examined at 100, 20, 10 and 5 metal complex: ethidium bromide ratios. For comparison purposes, a solution containing 100% ethidium bromide was also examined under the same conditions.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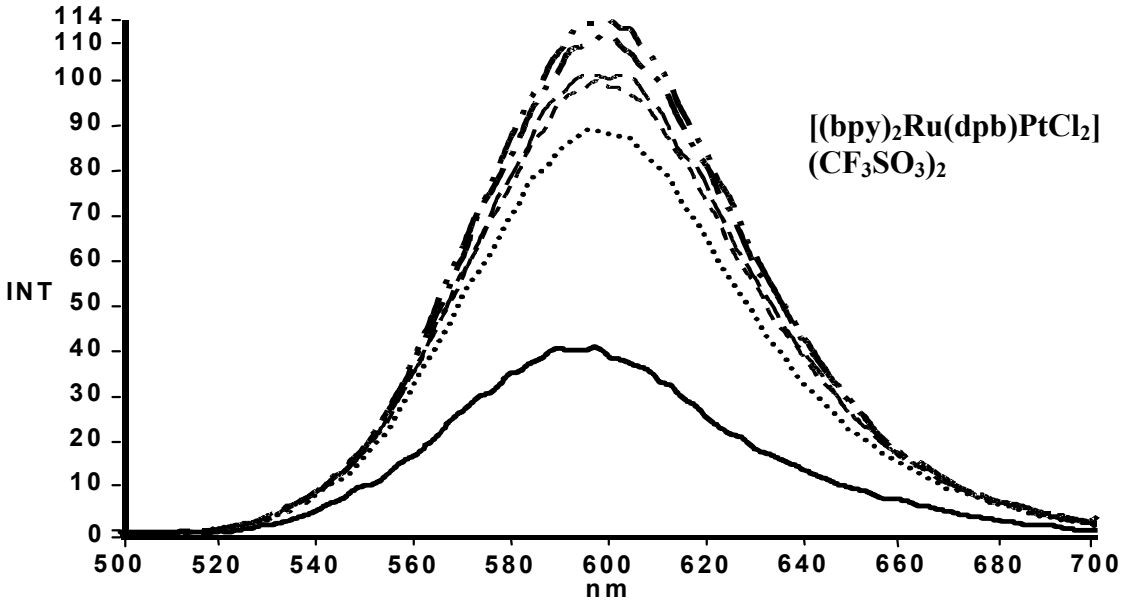
nm
[(bpy)2Ru(dpq)PtCl2]
(CF3SO3)2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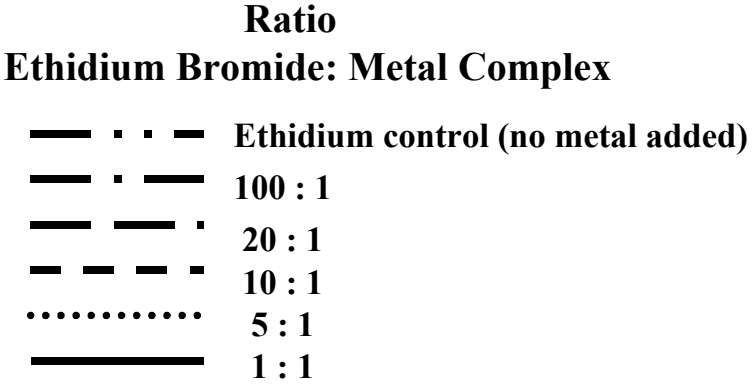
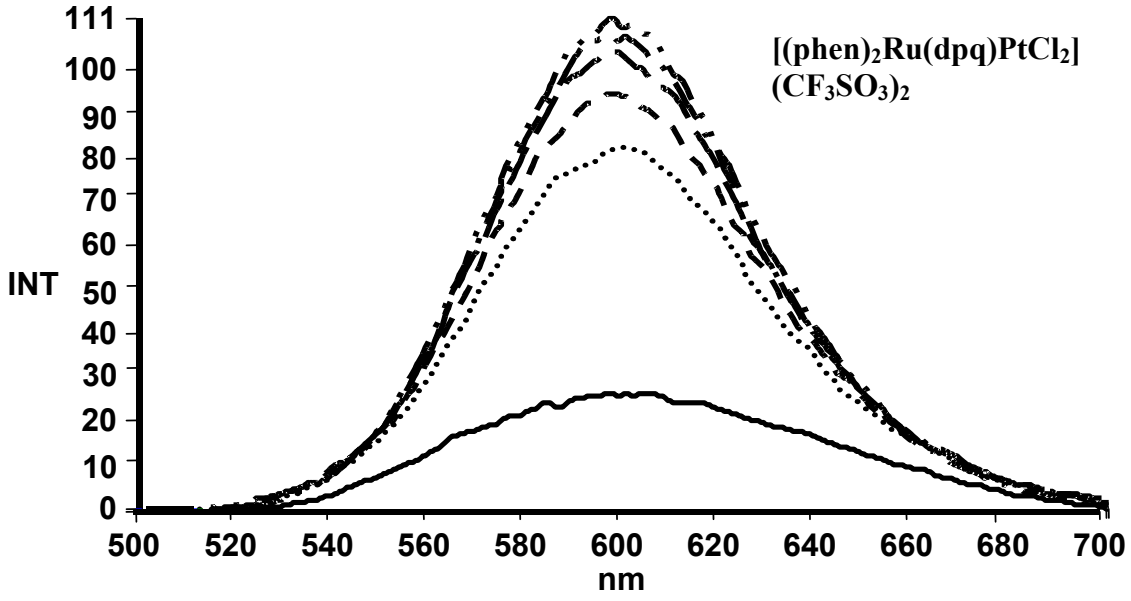
nm
[(bpy)2Ru(dpb)PtCl2]
(CF3SO3)2



D-6 **(following page)**. Ethidium bromide quenching study for $[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$, and $[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ (where phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline and dpb = 2,3-bis(2-pyridyl)benzoquinoxaline)). Graph of fluorescence intensity versus wavelength, examined at 100, 20, 10 and 5 metal complex: ethidium bromide ratios. For comparison purposes, a solution containing 100% ethidium bromide was also examined under the same conditions.


[(phen)2Ru(dpq)PtCl2]
(CF3SO3)2
INT
111
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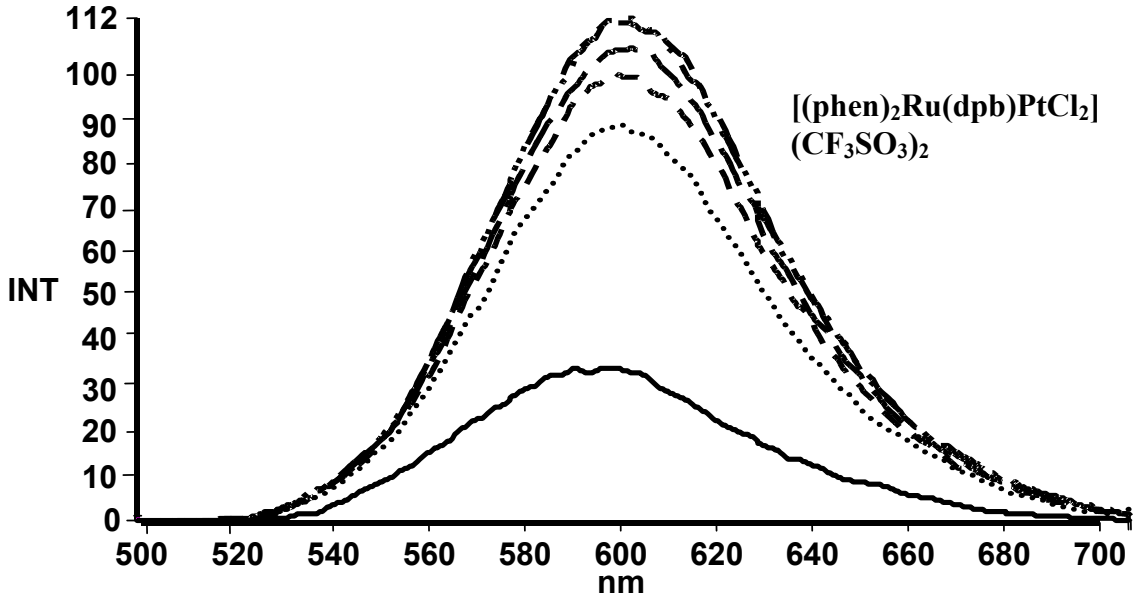
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(CF3SO3)2
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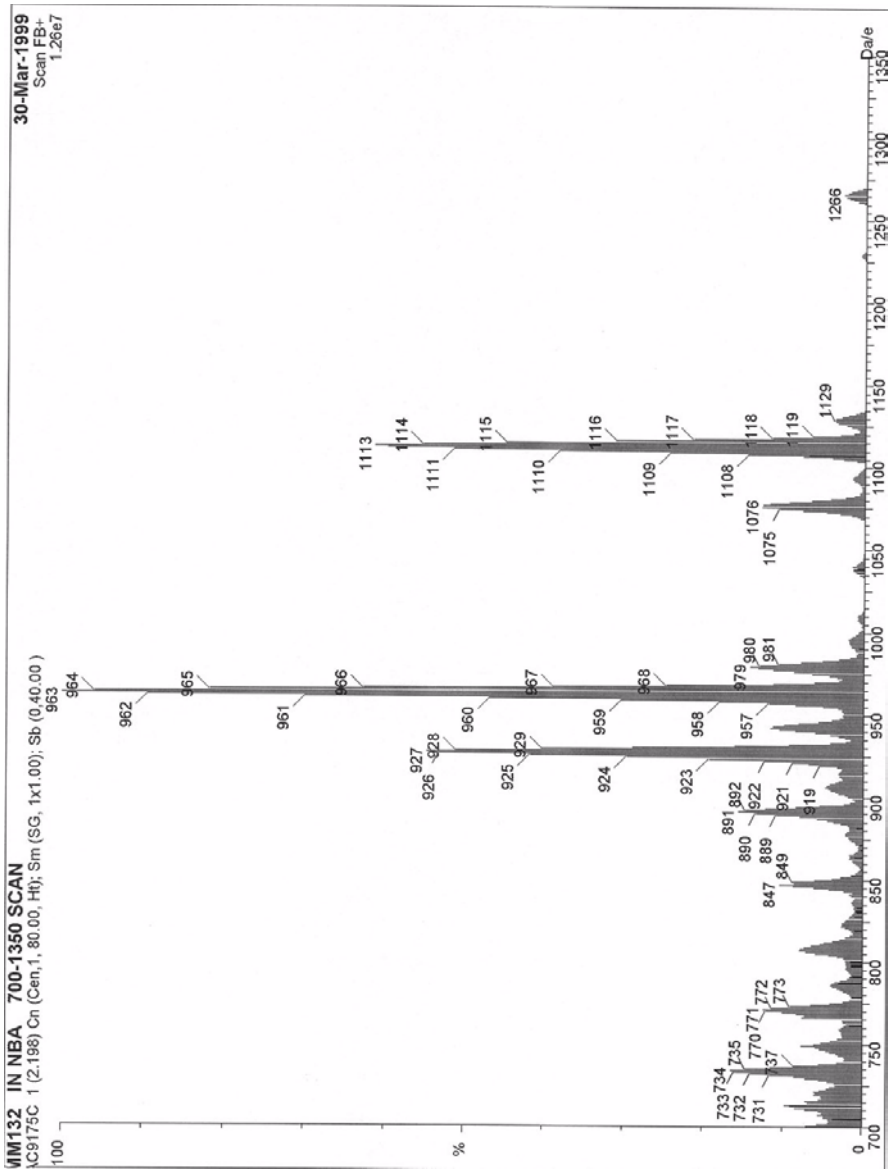
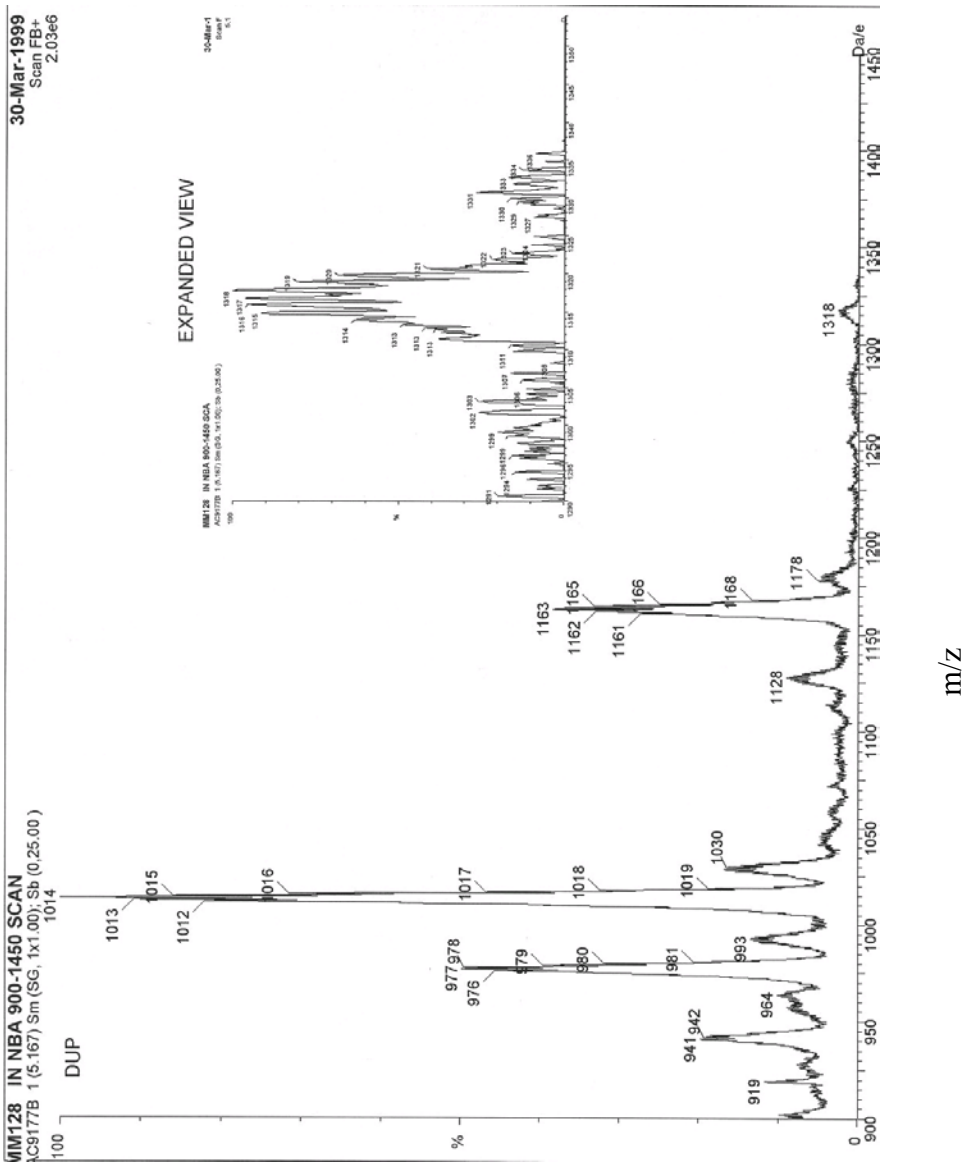
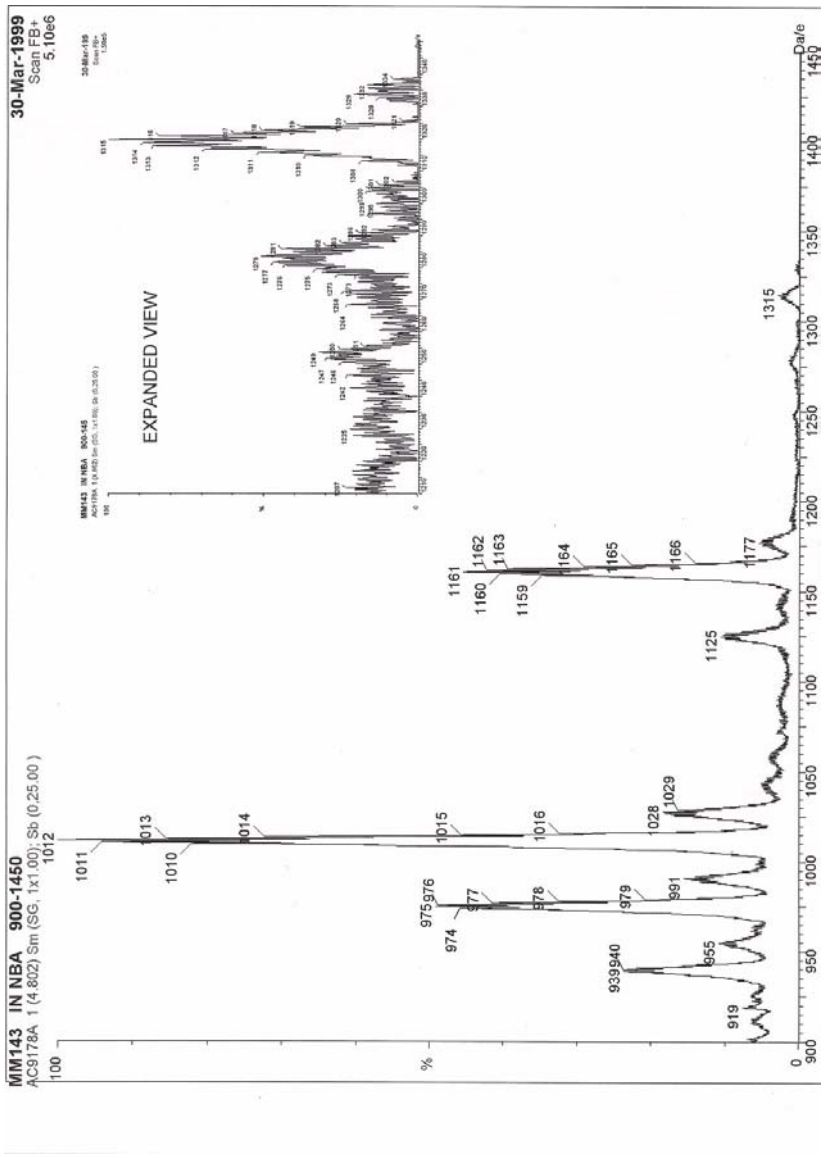


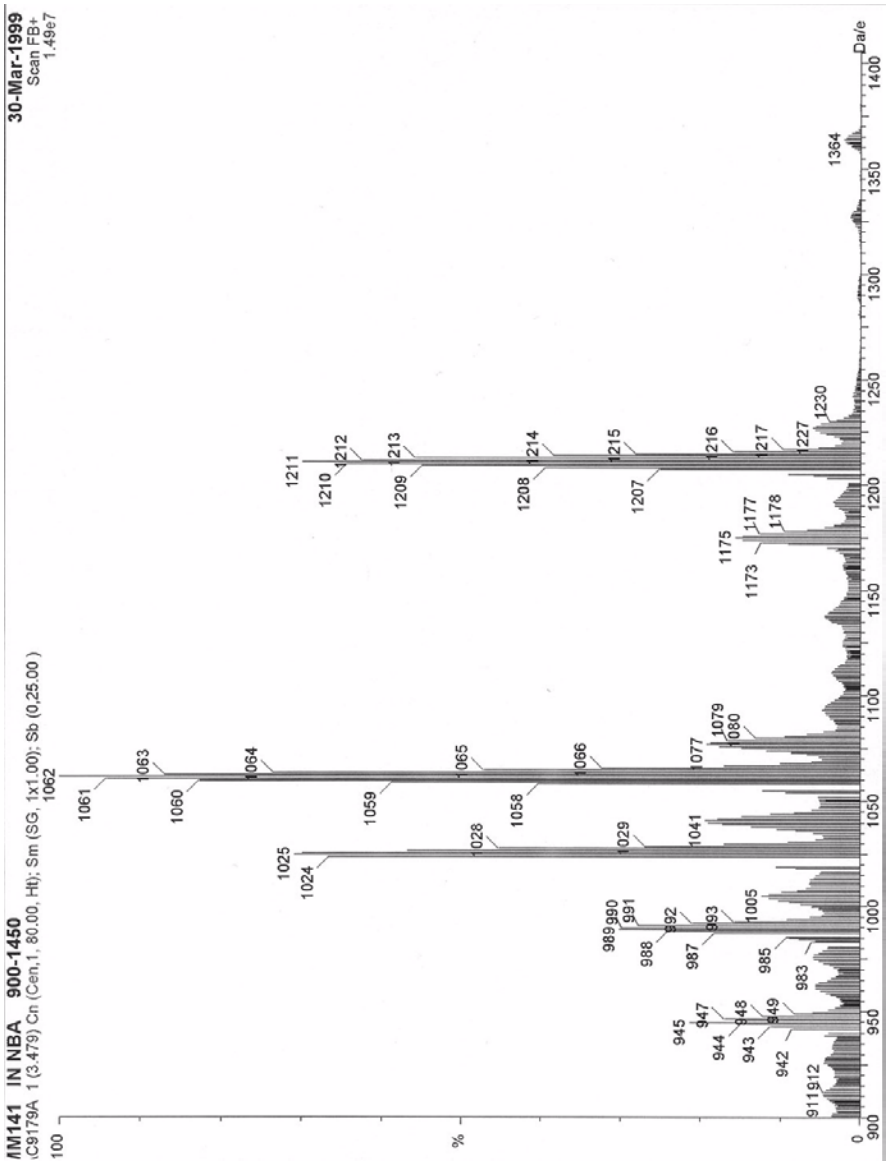
E-1 Fast atom bombardment mass spectrum of $[(bpy)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ (where bpy = 2,2′-bipyridine, dpq = 2,3-bis(2-pyridyl)quinoxaline), liquid matrix of neat nitrobenzylalcohol, Fisions VG Quattro Triple-Stage Quadupole Mass Spectrometer.



E-2 Fast atom bombardment mass spectrum of $[(bpy)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ (where bpy = 2,2′-bipyridine, dpb = 2,3-bis(2-pyridyl)benzoquinoxaline), liquid matrix of neat nitrobenzylalcohol, Fisions VG Quattro Triple-Stage Quadupole Mass Spectrometer.



5-3 Fast atom bombardment mass spectrum of $[(phen)_2Ru(dpq)PtCl_2](CF_3SO_3)_2$ (where phen = 1,10-phenanthroline, dpq = 2,3-bis(2-pyridyl)quinoxaline), liquid matrix of neat nitrobenzylalcohol, Fisions VG Quattro Triple-Stage Quadupole Mass Spectrometer.



5-4 Fast atom bombardment mass spectrum of $[(phen)_2Ru(dpb)PtCl_2](CF_3SO_3)_2$ (where phen = 1,10-phenanthroline, dpb = 2,3-bis(2-pyridyl)benzoquinoxaline), liquid matrix of neat nitrobenzylalcohol, Fisions VG Quattro Triple-Stage Quadupole Mass Spectrometer.