

**Charge Separation in
Ruthenium-Quencher Conjugates
bound to DNA**

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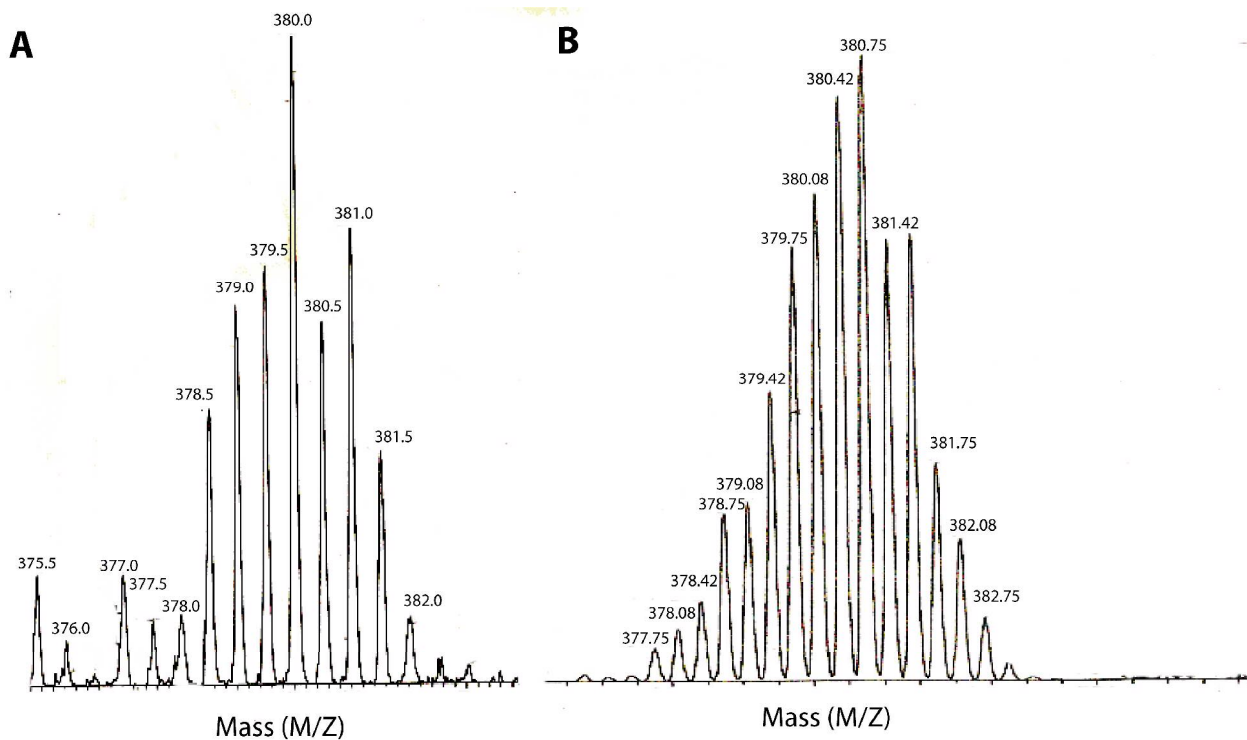


Figure S1. Electro spray ionization mass spectrum of [$\{\text{Ru}(\text{phen})(\text{dppz})(\text{bpy}'\text{-his})\}\{\text{Ru}(\text{NH}_3)_5\}]^{5+}$ (**A**) and simulated mass spectrum of a compound with the same chemical formula as [$\{\text{Ru}(\text{phen})(\text{dppz})(\text{bpy}'\text{-his})\}\{\text{Ru}(\text{NH}_3)_5\}]^{5+}$ (**B**).

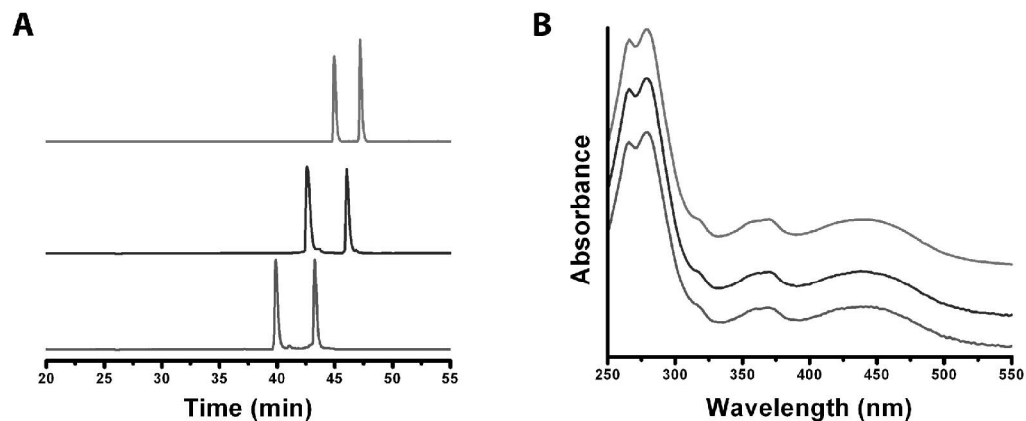


Figure S2. Reversed-phase HPLC chromatograms monitoring at 450 nm for the three complexes used in this study are depicted in **A**. The two isomers of $[\{\text{Ru}(\text{phen})(\text{dppz})(\text{bpy}'\text{-his})\}\{\text{Ru}(\text{NH}_3)_5\}]^{5+}$ elute first (bottom trace), followed by the two isomers of $[\text{Ru}(\text{phen})(\text{dppz})(\text{bpy}'\text{-his})]^{2+}$ (middle trace) while the two isomers of $[\text{Ru}(\text{phen})(\text{dppz})(\text{bpy}')]^{2+}$ elute last (top trace). The absorbance spectra of these complexes are shown in **B** with analogous positioning as in **A**.

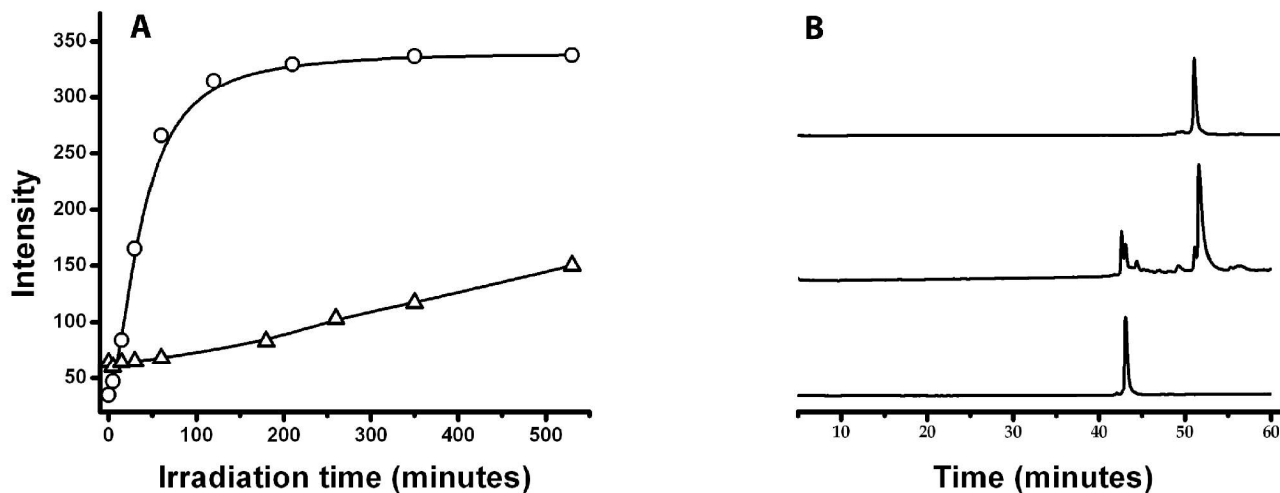


Figure S3. Effect of 442 nm irradiation on $[\{\text{Ru}(\text{phen})(\text{dppz})(\text{bpy}'\text{-his})\}\{\text{Ru}(\text{NH}_3)_5\}]^{5+}$. A plot of the intensity at 650 nm as a function of irradiation at 442 nm is shown in **A** for the complex in acetonitrile (open circles) and in 1 mM poly d(AT) in 10 mM sodium phosphate, 50 mM NaCl, pH 7 (open triangles). HPLC chromatogram of the complex in acetonitrile following 530 minutes of irradiation at 442 nm is shown as the middle trace in **B**. $[\{\text{Ru}(\text{phen})(\text{dppz})(\text{bpy}'\text{-his})\}\{\text{Ru}(\text{NH}_3)_5\}]^{5+}$ (bottom trace) and $[\text{Ru}(\text{phen})(\text{dppz})(\text{bpy}'\text{-his})]^{2+}$ (top trace) are shown for comparison.

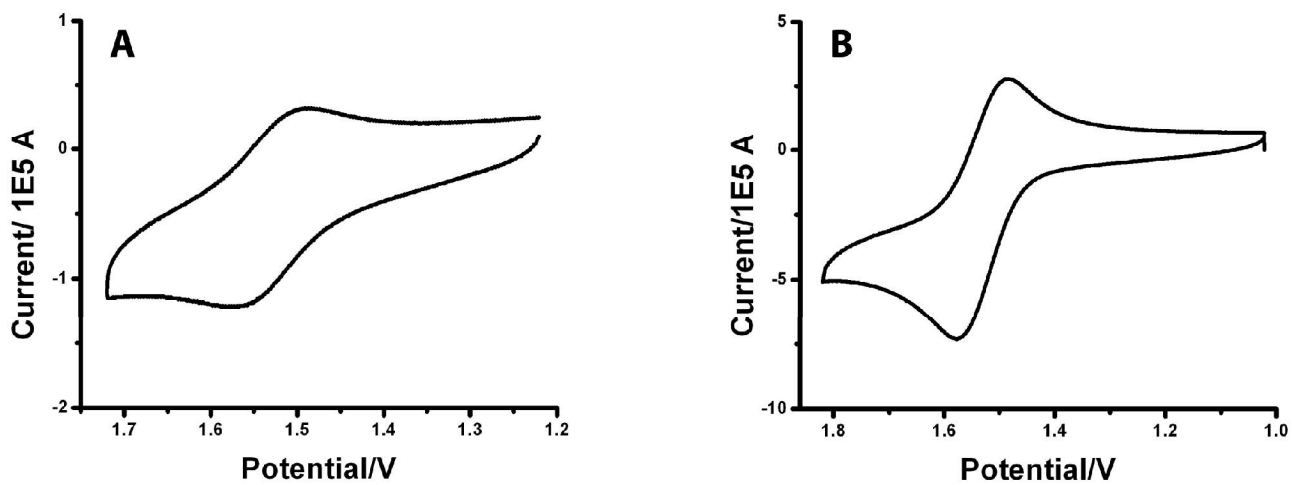


Figure S4. Electrochemical profiles for oxidation of [Ru(phen)(dppz)(bpy)]²⁺ (**A**) and [Ru(phen)(dppz)(bpy'-his)]²⁺ (**B**). Samples were measured in acetonitrile with 0.1 M tetrabutylammonium hexafluorophosphate. See Experimental.

Table S1. DNA sequences and extinction coefficients

DNA	Sequence (5'-3')	ϵ_{260} ($M^{-1}cm^{-1}$)
A	ATACGGCTGACTACGGCTCGT	197200
B	ACGAGCCGTAGTCAGCCGTAT	205700
G2-A	ATAC ^{CP} GGCTGACTACGGCTCGT	197200
G2-B	ACGAGCCGTAGTCAGCCGTAT	205700
C1-A	ATACGG ^{CP} CTGACTACGGCTCGT	197200
C1-B	ACGAGCCGTAGTCAGCCGTAT	205700