Supporting Information for

Fine control on the photochemical and photobiological properties of Ru(II) arene complexes

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Figure S1. Absorption spectra changes of 1 (25 μ M) in PBS (pH = 7.4) after standing in the dark for 4 h at room temperature.



Figure S2. Absorption spectra changes of **2** (25 μ M) in PBS (pH = 7.4) after standing in the dark for 4 h at room temperature.



Figure S3. Absorption spectra changes of **3** (25 μ M) in PBS (pH = 7.4) after standing in the dark for 4 h at room temperature.



Figure S4. Absorption spectra changes of 4 (25 μ M) in PBS (pH = 7.4) after standing in the dark for 4 h at room temperature.



Figure S5. Absorption spectra changes of 5 (25 μ M) in PBS (pH = 7.4) after standing in the dark for 4 h at room temperature.



Figure S6. Absorption spectra changes of 6 (25 μ M) in PBS (pH = 7.4) after standing in the dark for 4 h at room temperature.



Figure S7. Absorption (left) and fluorescence emission (right) spectra changes of 1 (25 μ M) in PBS (pH = 7.4) upon irradiation with $\lambda > 470$ nm.



Figure S8. Absorption (left) and fluorescence emission (right) spectra changes of **2** (25 μ M) in PBS (pH = 7.4) upon irradiation with $\lambda > 470$ nm.



Figure S9. Absorption (left) and fluorescence emission (right) spectra changes of **3** (25 μ M) in PBS (pH = 7.4) upon irradiation with $\lambda > 470$ nm.



Figure S10. Absorption (left) and fluorescence emission (right) spectra changes of 4 (25 μ M) in PBS (pH = 7.4) upon irradiation with $\lambda > 470$ nm.



Figure S11. Absorption (left) and fluorescence emission (right) spectra changes of 5 (25 μ M) in PBS (pH = 7.4) upon irradiation with $\lambda > 470$ nm.



Figure S12. Absorption (left) and fluorescence emission (right) spectra changes of 6 (25 μ M) in PBS (pH = 7.4) upon irradiation with $\lambda > 470$ nm.



Figure S13. ¹H NMR spectra of **1** in CD₃COCD₃:D₂O (1:2) before and after irradiation ($\lambda > 400$ nm) for 12 h. The chemical shifts of the two protons (H_a and H_b) on the central ring of benzoquinoxaline in the original complex are labeled by \triangle .



Figure S14. ¹H NMR spectra of **2** in CD₃COCD₃:D₂O (1:2) before and after irradiation ($\lambda > 400$ nm) for 12 h. The chemical shifts of the two protons (H_a and H_b) on the central ring of benzoquinoxaline in the original complex are labeled by \triangle .



Figure S15. EPR signals obtained upon irradiation of O_2 -saturated CH₃CN solutions of TEMP and 1-6 with a 532 nm laser. The dark control means without irradiation.



Figure S16. Absorption spectra changes of **1-6** in air-saturated CH₃CN upon irradiation at 500 nm for 5 min.



Figure S17. Transient absorption spectra of dpb in Ar-saturated CH₃CN upon pulsed excitation at 355 nm.



Figure S18. Transient absorption spectra of $[Ru(bpy)^2(dpb)]^{2+}$ in Ar-saturated CH₃CN upon pulsed excitation at 532 nm.



Figure S19. AMDA bleaching (at 405 nm) in the presence of **1-6** in PBS upon irradiation at 500 nm.



Figure S20. Agarose gel electrophoresis pattern of supercoiled pUC19 DNA (40 μ g mL⁻¹) in PBS (pH = 7.4) in the dark in the presence of **1-6** (80 μ M). Lane 1 and 8, supercoiled DNA alone; lane 2, DNA + 1; lane 3, DNA + 2; lane 4, DNA + 3; lane 5, DNA + 4; lane 6, DNA + 5; lane 7, DNA + 6.

	1	2	3	4	5	6
light IC50 [µM]	28.3	30.4	7.5	4.0	5.6	10.2
dark IC ₅₀ [µM]	29.2	30.8	31.0	27.6	19.2	19.1

Table S1. IC_{50} values of 1-6 against A459 cells in the dark or under irradiation.