Supporting Information for

Two novel BODIPY-Ru(II) arene dyads enabling effective photo-inactivation against cancer cells

Tianji Wang,[a,b] Yuanjun Hou,[a] Yongjie Chen,[a,b] Ke Li,[a,b] Xuexin Cheng,[a] Qianxiong Zhou ,[*a] Xuesong Wang[*a]

[a] Key Laboratory of Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, P. R. China

[b] Graduate School of Chinese Academy of Sciences, Beijing 100049, P. R. China

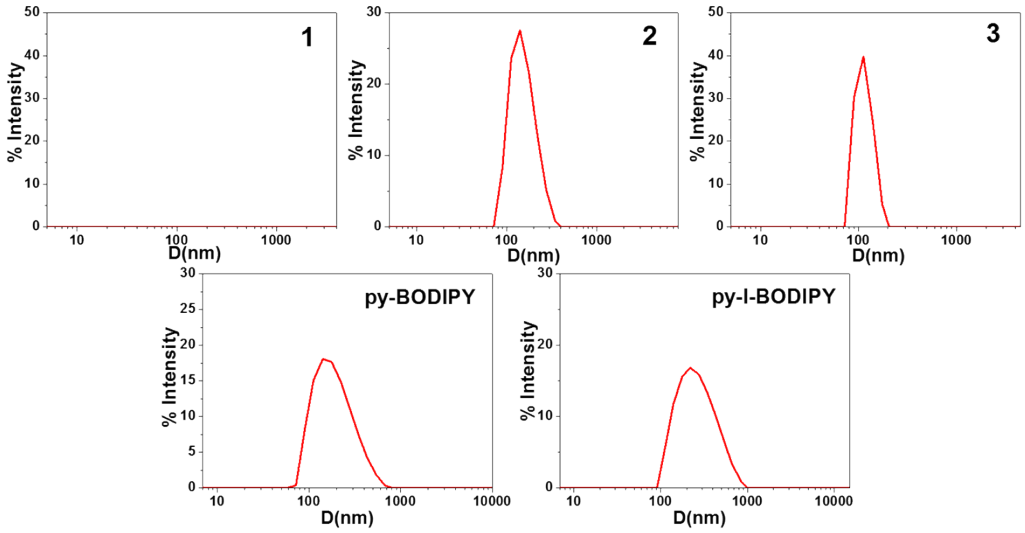

Figure S1. Hydrodynamic diameter distributions of **1**, **2**, **3**, py-BODIPY and py-I-BODIPY (5 μM) in PBS (pH = 7.4, 5 mM)/DMSO (8:1) solutions at room temperature.

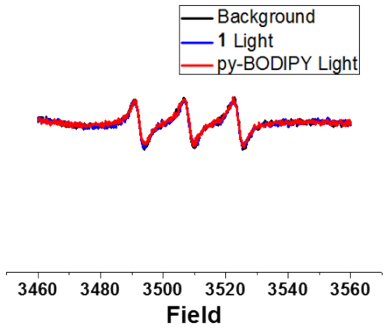

Figure S2. EPR signals obtained upon irradiation of air-saturated CH_3CN solutions of TEMP (1 mM) alone (background) and in the presence of **1** or py-BODIPY (10 μM) with 532 nm pulsed laser.

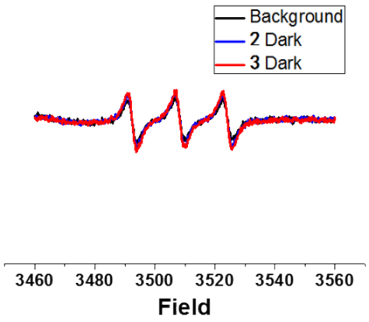

Figure S3. EPR signals of air-saturated CH_3CN solutions of TEMP (1 mM) alone (background) and in the presence of **2** or **3** (10 μM) in the dark.

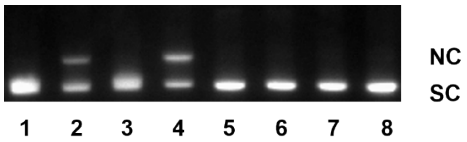

Figure S4. Agarose gel electrophoresis pattern of supercoiled pUC19 plasmid DNA (40 μg/mL) in air-saturated PBS (pH = 7.4, 5 mM)/DMSO (8:1) under different conditions. Lane 1, DNA + **2**; Lane 2, DNA + **2** + hν; Lane 3, DNA + **3**; Lane 4, DNA + **3** + hν; Lane 5, DNA alone; Lane 6, DNA + py-BODIPY; Lane 7, DNA + py-BODPY + hν; Lane 8, DNA alone + hν. hν denotes an irradiation (> 470 nm) for 15 min. SC and NC and represent supercoiled circular and nicked circular forms, respectively. The concentrations of **2**, **3** and py-BODIPY are 10 μM.

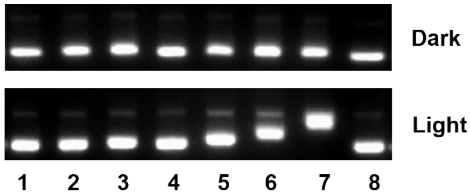

Figure S5. Agarose gel electrophoresis pattern of supercoiled pUC19 plasmid DNA (40 μg/mL) in air-saturated PBS (pH = 7.4, 5 mM)/DMSO (8:1) in the dark (top panel) or upon irradiation (> 470 nm) for 15 min (bottom panel) in the presence of varied concentrations of **1**. Lane 1 and 8, DNA alone; Lane 2-7, the concentrations of **1** are 1, 5, 10, 25, 50, 100 μM, respectively.

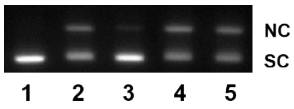

Figure S6. Agarose gel electrophoresis pattern of supercoiled pUC19 plasmid DNA (40 μg/mL) in air-saturated PBS (pH = 7.4, 5 mM)/DMSO (8:1) upon irradiation (> 470 nm) for 15 min in the presence of varied concentrations of **2** (10 μM) and different additives. Lane 1, DNA alone; Lane 2, DNA + **2**; Lane 3, DNA + **2** + NaN_3 (50 mM); Lane 4, DNA + **2** + DMSO (50 mM); Lane 5, DNA + **2** + catalase (1000 U mL^{-1}). SC and NC represent supercoiled circular and nicked circular forms, respectively.

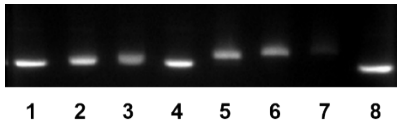

Figure S7. Agarose gel electrophoresis pattern of supercoiled pUC19 plasmid DNA (40 μg/mL) in air-saturated PBS (pH = 7.4, 5 mM)/DMSO (8:1) in the dark and in the presence of varied concentrations of **3**. Lane 4 and 8, DNA alone; Lane 1-3 and 5-7, the concentrations of **3** are 1, 5, 10, 25, 50, and 100 μM, respectively.

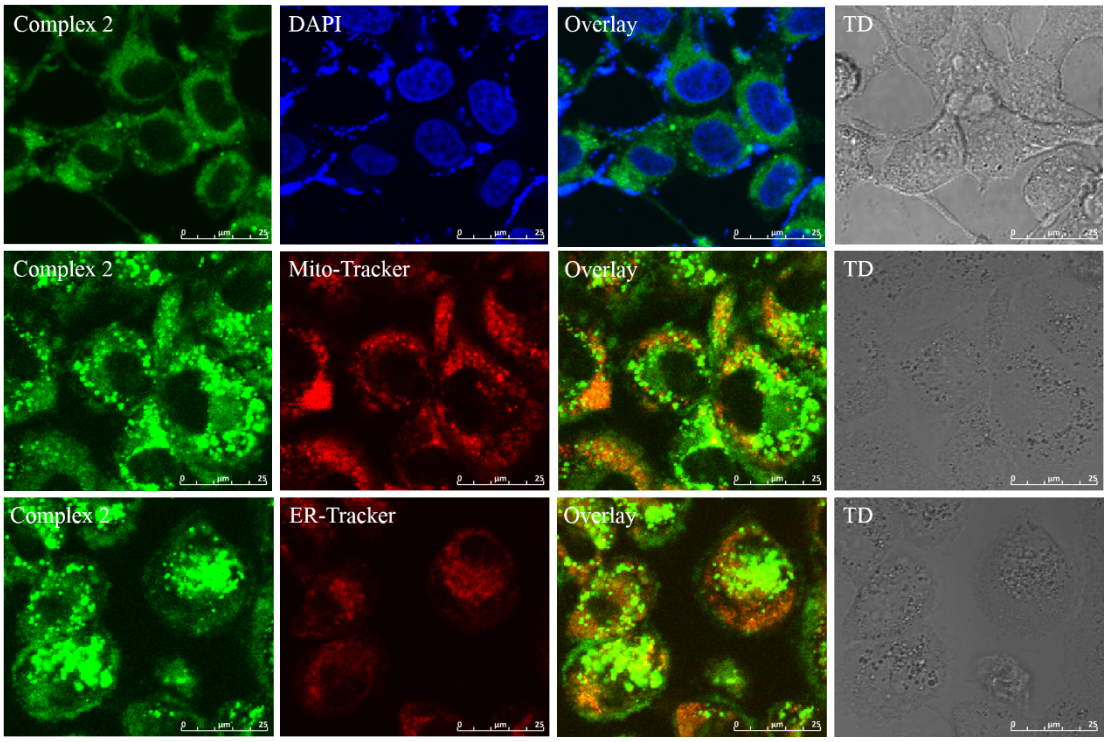

Figure S8. Double stain fluorescence images of SKOV3 cells incubated with **2** (0.5 μM) in DMEM for 25 min and then with DAPI, Mito-Tracker, or ER-Tracker (1 μM) in DMEM for 15 min. The cells were rinsed three times with PBS (pH = 7.4, 5 mM) before confocal analysis.

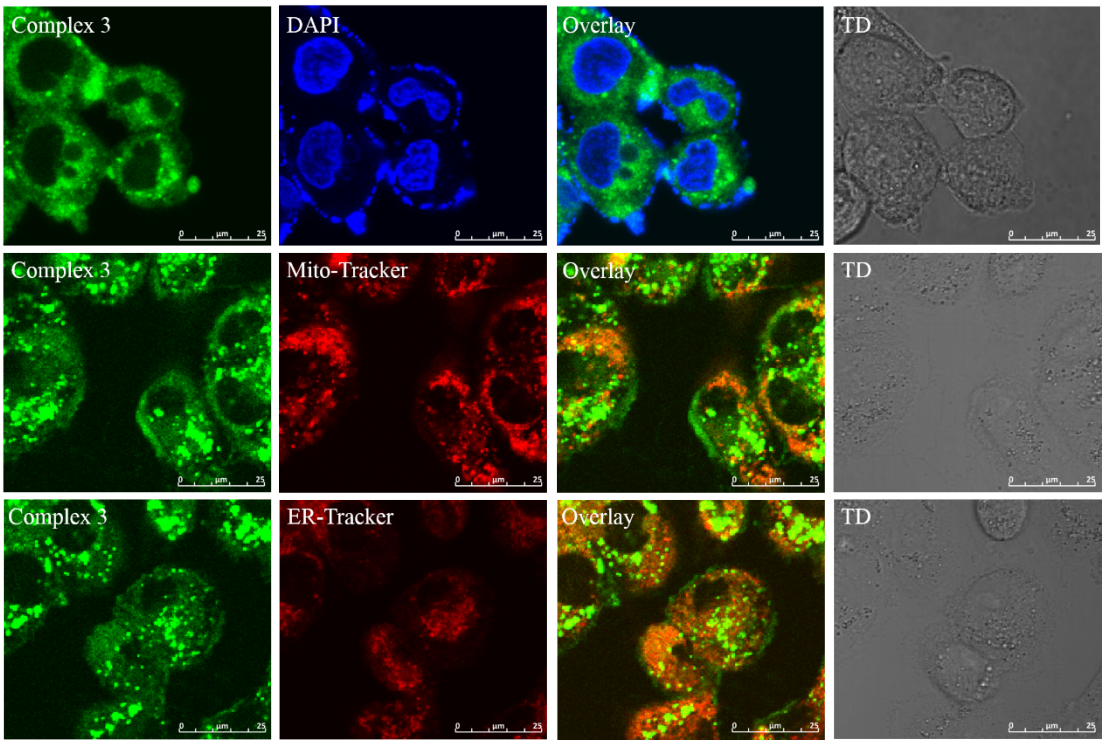

Figure S9. Double stain fluorescence images of SKOV3 cells incubated with **3** (0.5 μM) in DMEM for 25 min and then with DAPI, Mito-Tracker, or ER-Tracker (1 μM) in DMEM for 15 min. The cells were rinsed three times with PBS (pH = 7.4, 5 mM) before confocal analysis.