Supporting Information

Polythiophenes with Cationic Phosphonium Groups as Vectors for Imaging, siRNA Delivery, and Photodynamic Therapy

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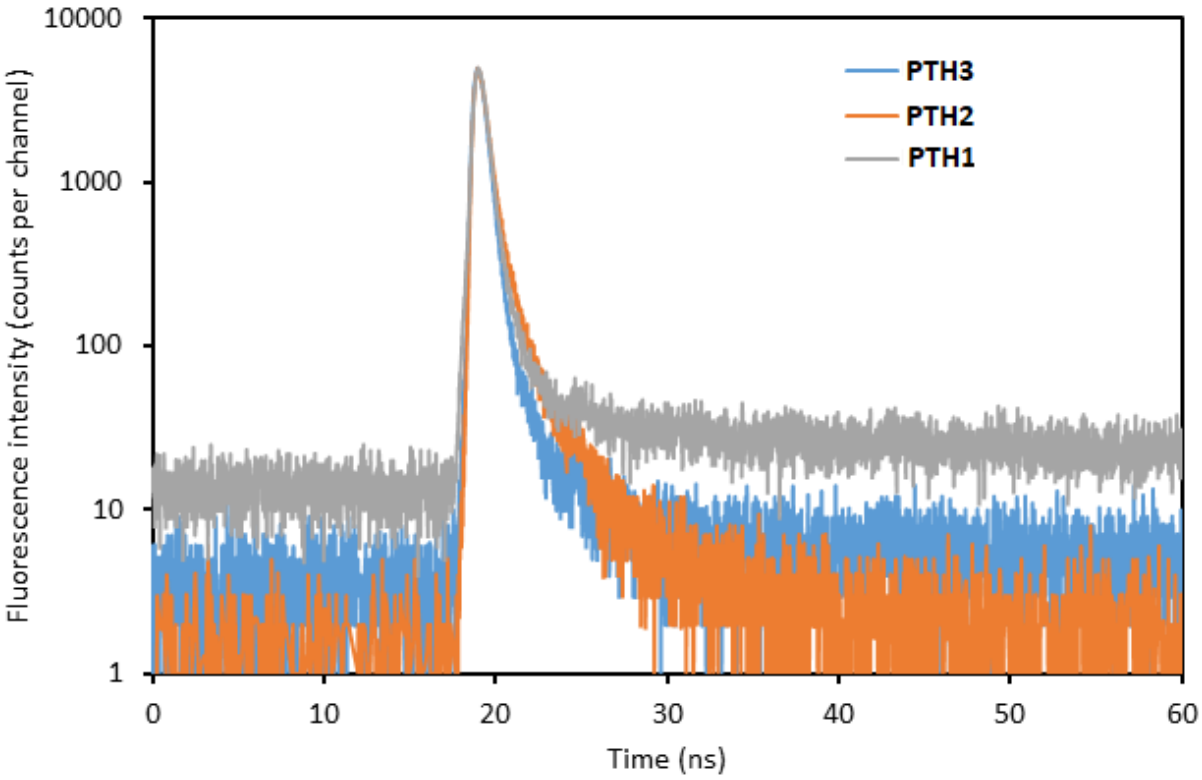


Figure S1. Fluorescence decay of **PTH1** (0.37 μM), **PTH2** (0.68 μM) and **PTH3** (0.81 μM) in water in D_2O (λ_{exc} = 407 nm).

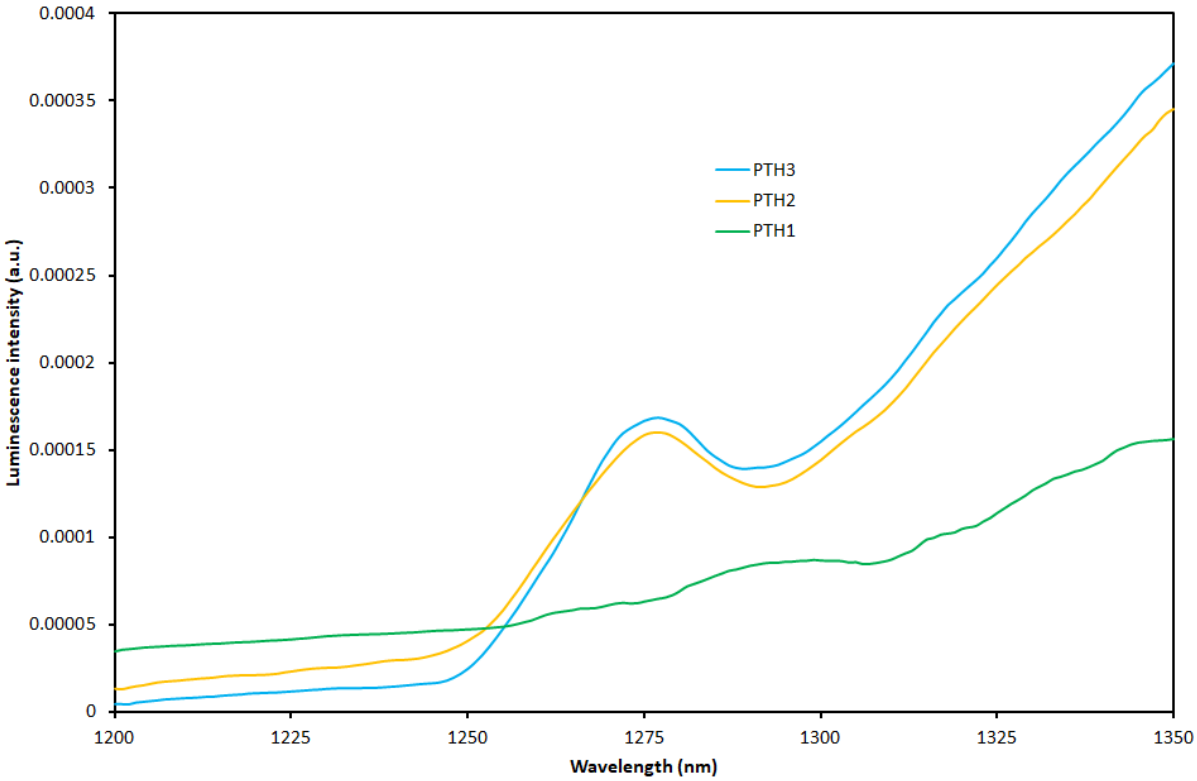


Figure S2. Singlet oxygen emission spectra of **PTH1**, **PTH2** and **PTH3** in D_2O (λ_{exc} = 466 nm).

			Size (d.nm...	% Intensity:	St Dev (d.n...
Z-Average (d.nm):	1647	Peak 1:	526,6	100,0	51,88
PdI:	0,536	Peak 2:	0,000	0,0	0,000
Intercept:	0,882	Peak 3:	0,000	0,0	0,000
Result quality	Refer to quality report				

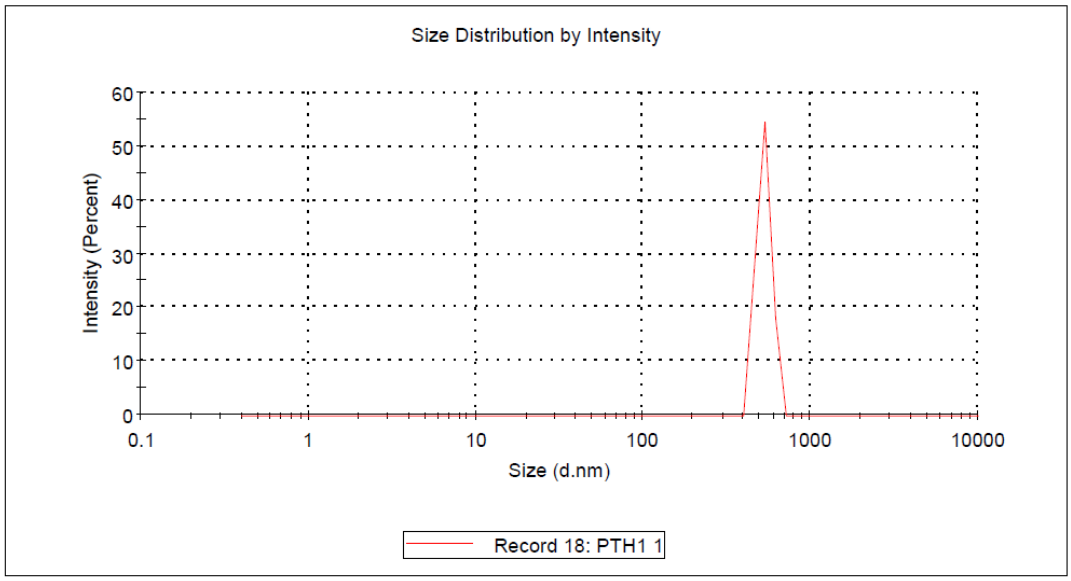


Figure S3. Particle Size distribution of **PTH1** in water (5 μM) at 25°C.

			Size (d.nm...	% Intensity:	St Dev (d.n...
Z-Average (d.nm):	110,3	Peak 1:	129,6	81,1	80,85
PdI:	0,386	Peak 2:	847,6	18,9	418,2
Intercept:	0,760	Peak 3:	0,000	0,0	0,000
Result quality	Good				

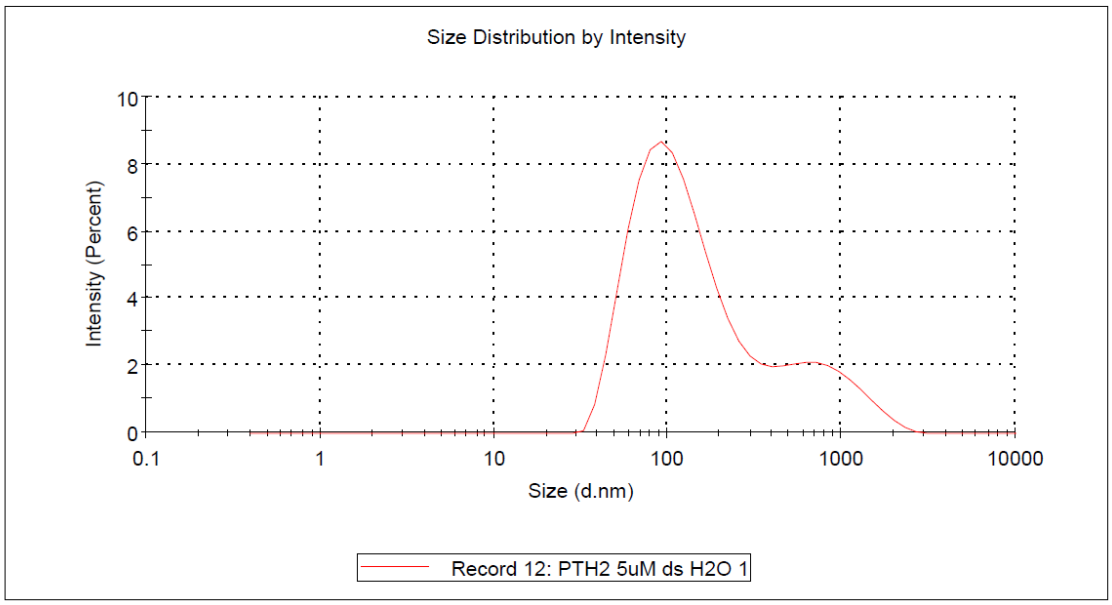


Figure S4. Particle Size distribution of **PTH2** in water (5 μM) at 25°C.

			Size (d.n...	% Number:	St Dev (d.n...
Z-Average (d.nm):	102,6	**Peak 1:**	48,67	100,0	16,81
PdI:	0,327	**Peak 2:**	0,000	0,0	0,000
Intercept:	0,648	**Peak 3:**	0,000	0,0	0,000
Result quality	Good				

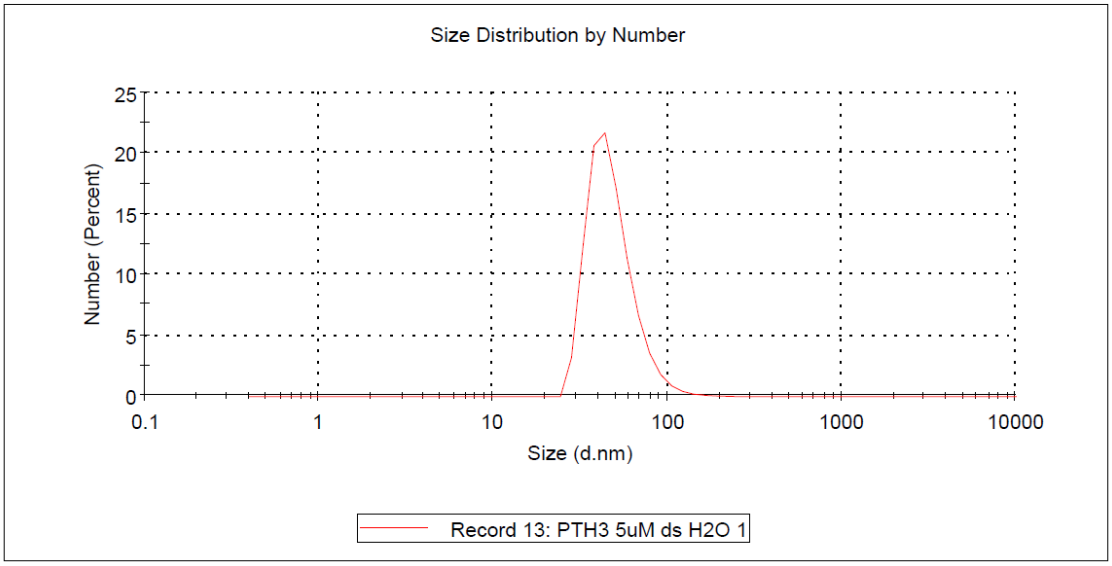
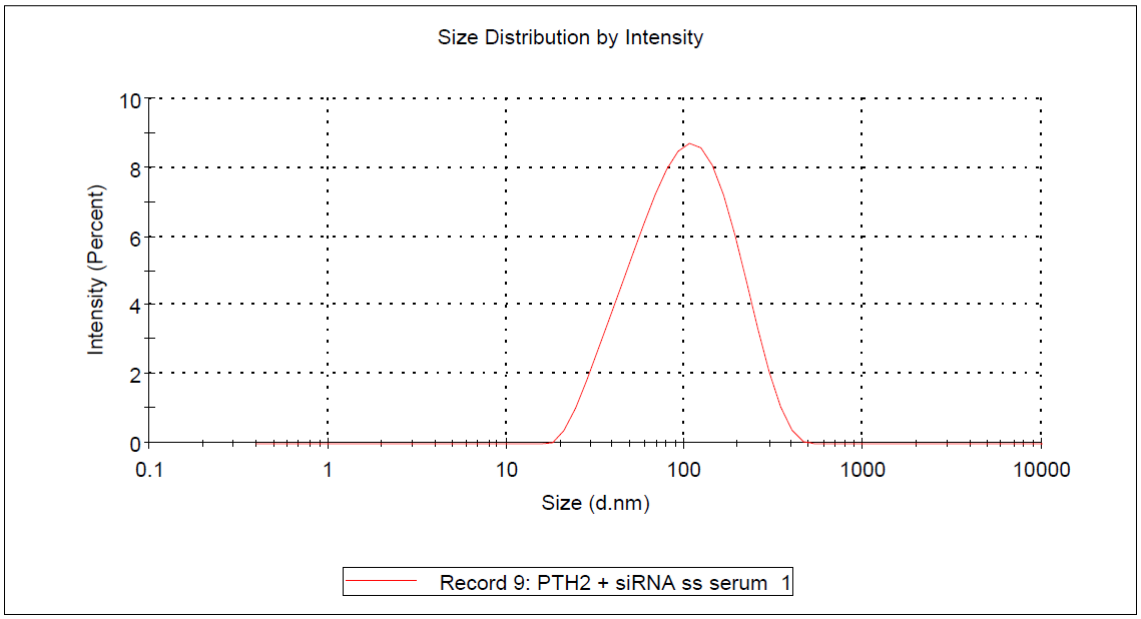


Figure S5. Particle Size distribution of **PTH3** in water (5 μM) at 25°C.

Z-Average (d.nm):	82,12	**Peak 1:**	115,5	100,0	70,74
PdI:	0,248	**Peak 2:**	0,000	0,0	0,000
Intercept:	0,900	**Peak 3:**	0,000	0,0	0,000
Result quality	Good				



		Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV):	15,2	**Peak 1:** 15,6	98,4	10,4
Zeta Deviation (mV):	11,1	**Peak 2:** -20,0	1,6	3,68
Conductivity (mS/cm):	0,0508	**Peak 3:** 0,00	0,0	0,00
Result quality	See result quality report			

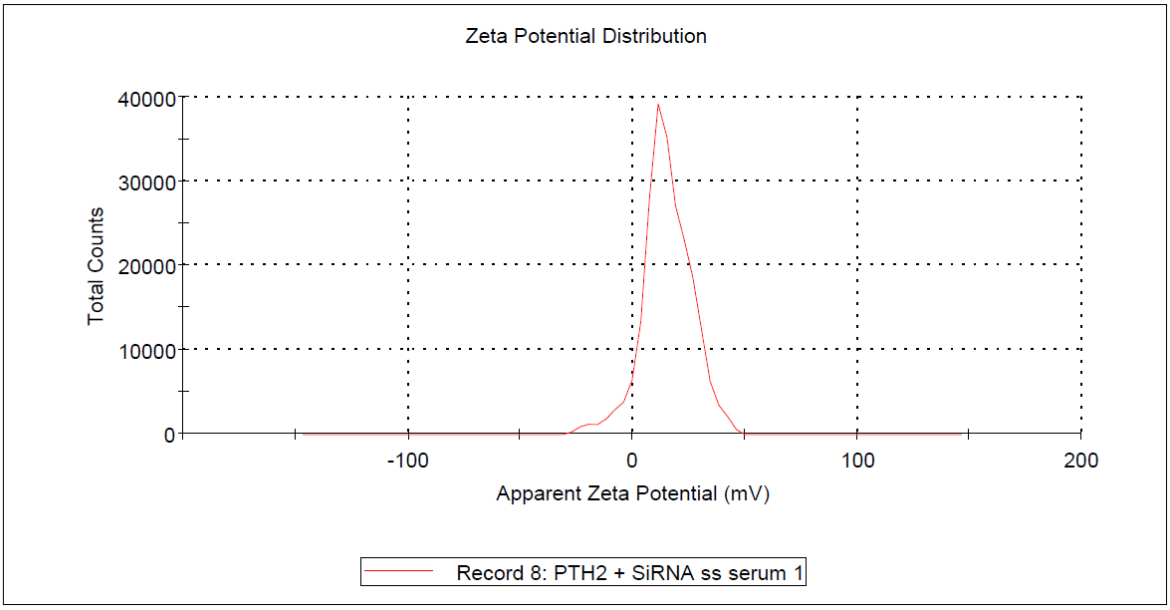
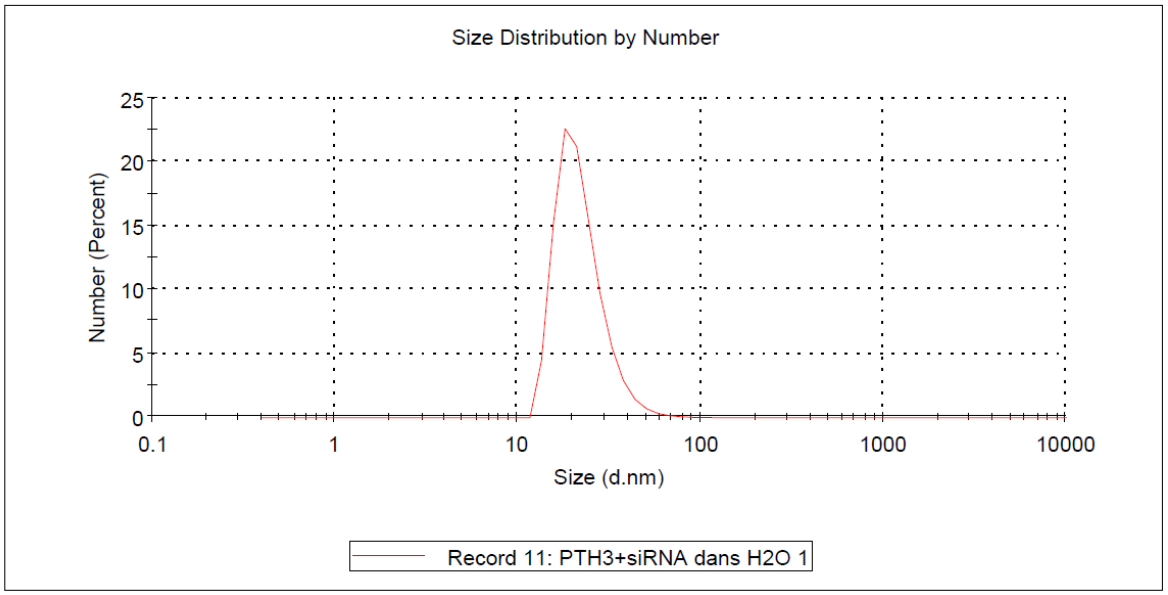


Figure S6. Particle size distribution (up) and zeta potential (down) of **PTH2/siRNA** polyplex in water (5 µM) at a P^+/P^- ratio of 100 at 25°C.

		Size (d.n...	% Number:	St Dev (d.n...
Z-Average (d.nm):	92,43	**Peak 1:** 22,43	100,0	7,803
PdI:	0,433	**Peak 2:** 0,000	0,0	0,000
Intercept:	0,722	**Peak 3:** 0,000	0,0	0,000
Result quality	Good			



			Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV):	20,2	**Peak 1:**	19,6	96,0	10,4
Zeta Deviation (mV):	12,0	**Peak 2:**	51,0	3,2	5,44
Conductivity (mS/cm):	0,0739	**Peak 3:**	-26,9	0,6	2,05
Result quality	See result quality report				

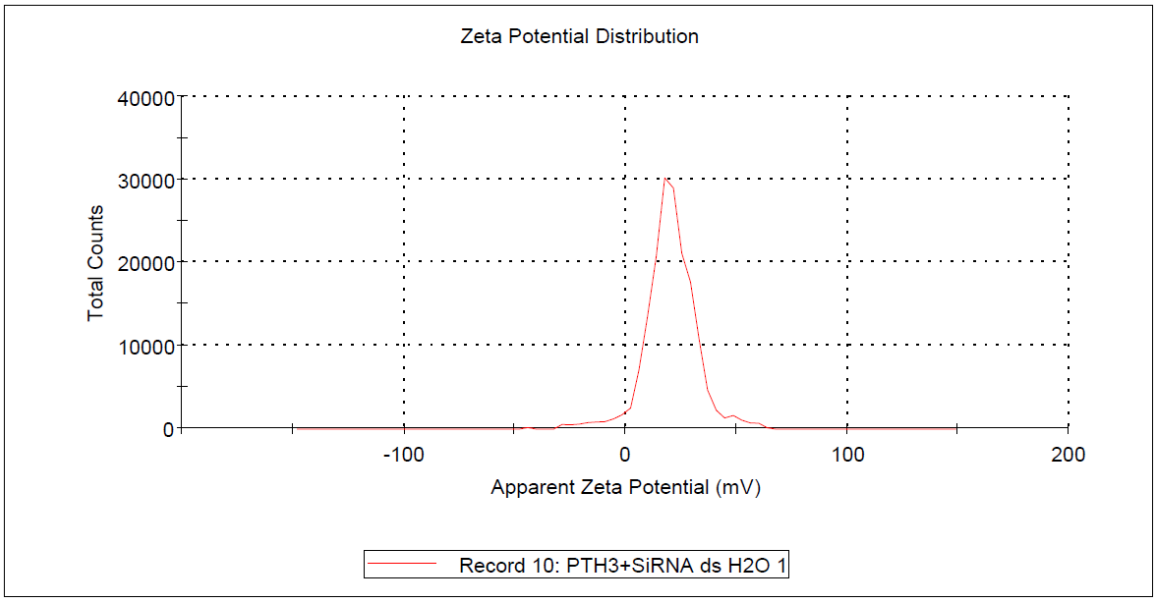


Figure S7. Particle size distribution (up) and zeta potential (down) of **PTH3/siRNA** polyplex in water (5 µM) at a P^+/P^- ratio of 100 at 25°C.

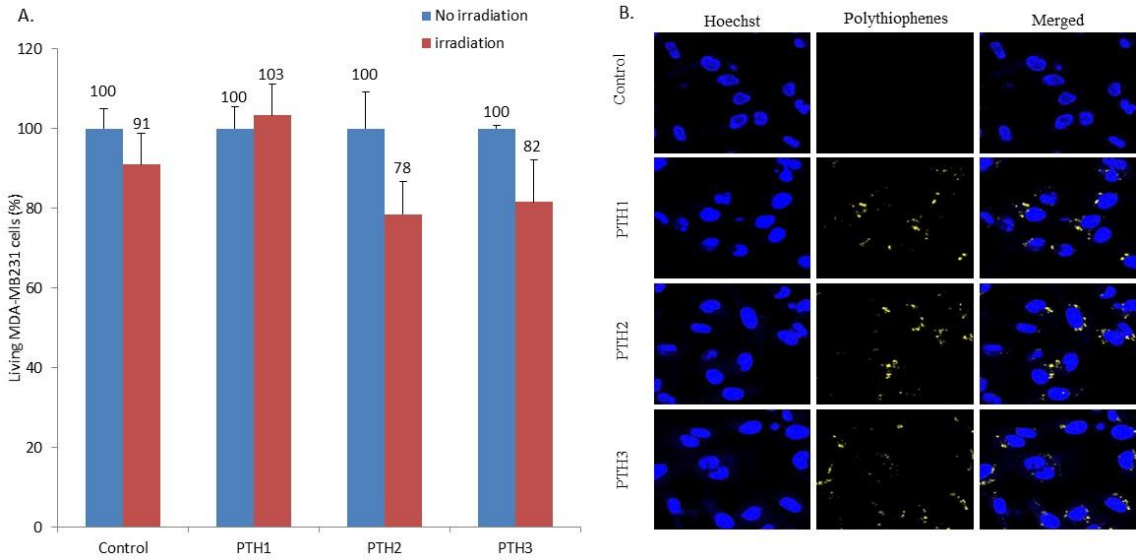


Figure S8. (**A**) **MDA-MB-231** cells were incubated with **PTH1**, **PTH2**, **PTH3** during 72 h. Cells were irradiated using confocal microscope with a chameleon laser beam at 800 nm, magnification x10, during 3 x 1.57 seconds. Two days after irradiation, cells were submitted to a MTT assay to quantify the cell death. (**B**) **MDA-MB-231** cells were incubated with or without **PTH1**, **PTH2**, **PTH3** during 24 h. Cells were incubated with Hoechst 15 min. They were imaged at 800 nm for polythiophenes and 760 nm for Hoechst using confocal microscope.