



Supplementary

An Engineered Nanocomplex with Photodynamic and Photothermal Synergistic Properties for Cancer Treatment

Eli Varon,^{1,2} Gaddi Blumrosen,^{1,2} Moshe Sinvani,^{1,2} Elina Haimov,^{1,2} Shlomi Polani,^{2,3} Michal Natan,^{1,2} Irit Shoval,⁴ Avi Jacob,⁴ Ayelet Atkins,² David Zitoun,^{2,3} and *Orit Shefi^{1,2,5}

¹ Faculty of Engineering, Bar-Ilan University, Ramat Gan 5290002, Israel.

² Bar-Ilan Institute of Nanotechnology and Advanced Materials, Bar-Ilan University, Ramat Gan 5290002, Israel.

³ Department of Chemistry, Bar-Ilan University, Ramat Gan 5290002, Israel.

⁴ Faculty of Life Sciences, Bar-Ilan University, Ramat Gan 5290002, Israel.

⁵ Gonda Multidisciplinary Brain Research Center, Bar-Ilan University, Ramat Gan 5290002, Israel.

* Correspondence: orit.shefi@biu.ac.il.

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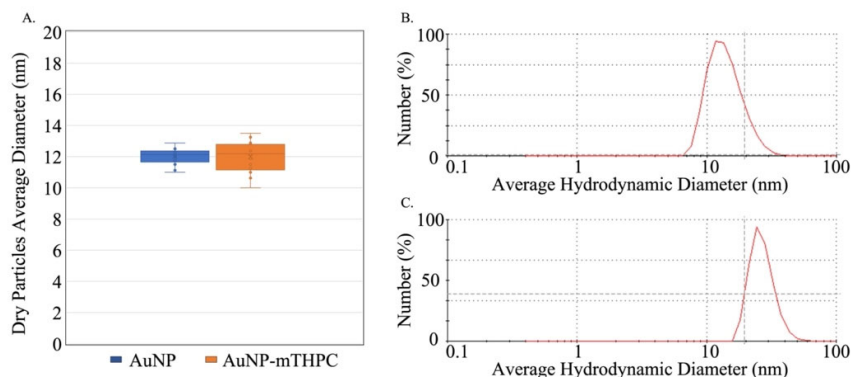


Figure S1 | Dry and hydrodynamic sizes of AuNP and AuNP-mTHPC. (A) The average dry size of AuNP and AuNP-mTHPC acquired through TEM, (n=20). Hydrodynamic size distribution of nanoparticles was measured using DLS. The diameter of AuNP (B) was 52 ± 4 nm, while that of mTHPC-coated AuNP (C) was 77 ± 8 nm.

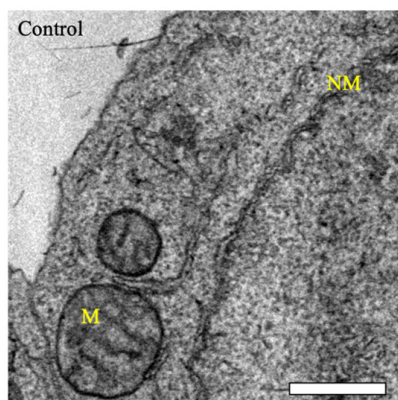


Figure S2 | SH-SY5Y untreated TEM images (A) Electron micrograph of SH-SY5Y untreated cells. The image shows mitochondria (M) that do not contain AuNP-mTHPC. The plasma membrane and the nuclear membrane (NM) are well shaped. Scale bar = 0.5 μ m.

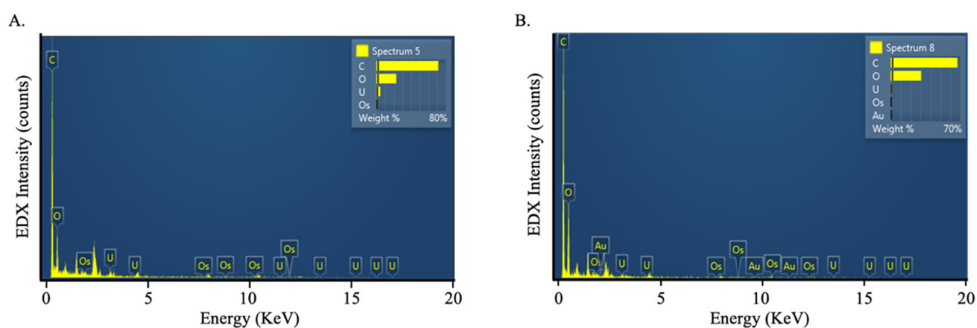


Figure S3 | EDX analysis of SH-SY5Y cells. Energy disperse spectroscopic spectra (A) Untreated cells (B) Cells treated with 1.2 μ M AuNP-mTHPC. The element weight percent of C, O, Os, Au, and U is displayed.

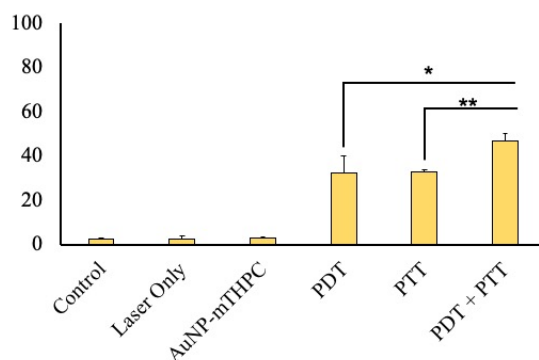


Figure S4 | Cell death induced by laser irradiation after 24 h incubation with AuNP-mTHPC complex. (A) Cell viability of SH-SY5Y cells with 1.2 μ M AuNP-mTHPC and illuminated under 650 nm laser (PDT) at 6 mW/cm² for 4 min or illuminated under 532 nm laser (PTT) at 15 mW/cm² for 4 min. The combination of PDT PTT was conducted using 2 min of each laser. Average quantification of three experiments is presented in the plots (mean \pm STDEV). There were significant differences in the relative levels control and PDT and PTT in the experiments. **P < 0.01, *P < 0.05.

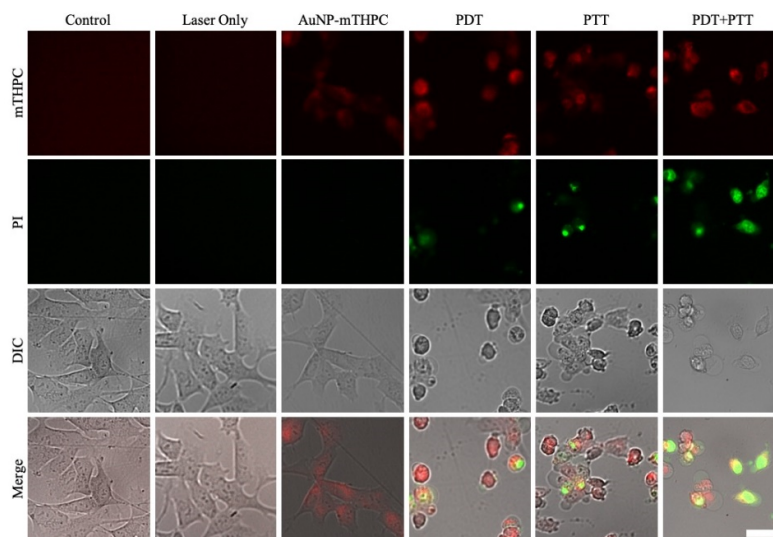


Figure S5 | Microscopy Images of SH-SY5Y cells after PDT/PTT treatment (A) Confocal microscopy of 1.2 μ M AuNP-mTHPC (red) and PI (green) labeled SH-SY5Y cells after laser irradiation under 650 nm laser (PDT) at 6 mW/cm² for 4 min or/and illuminated under 532 nm laser (PTT) at 15 mW/cm² for 4 min. Scale bar = 50 μ m.