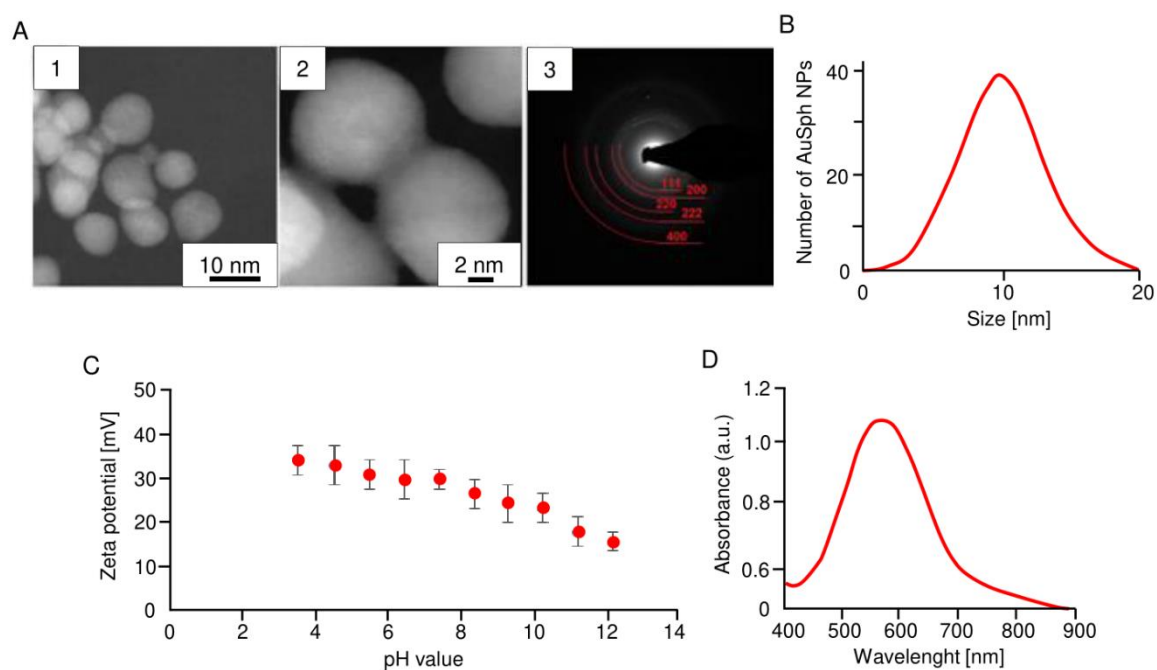
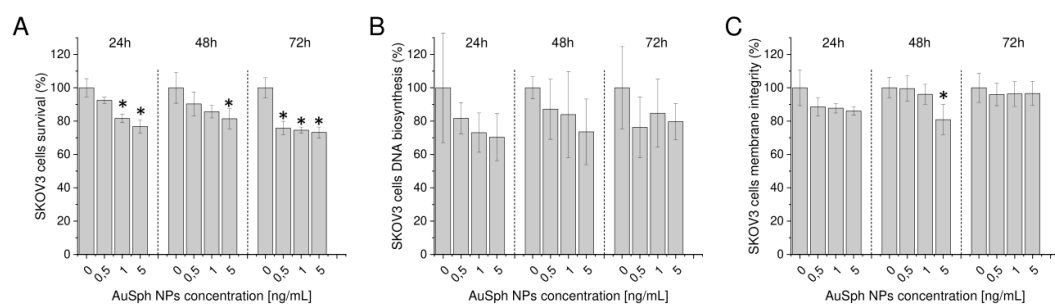


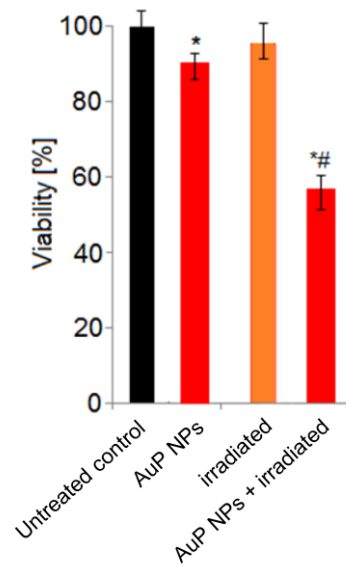
Supplementary materials



Supplementary Figure 1. Physicochemical characterization of spherical-shaped gold nanoparticles (AuSph NPs). Overview STEM (panel A1), HRSTEM (panel A2) and selected area diffraction (SAED) (panel A3). AuP NPs size distribution (panel B), zeta potential in different pH (panel C) and UV-Vis spectrum (panel D).



Supplementary Figure 2. Cytotoxicity of spherical-shaped gold nanoparticles (AuSph NPs) against human ovarian cancer SKOV3 cells. Cancer cell metabolic activity (panel A), DNA biosynthesis (panel B) and membrane permeability (panel C) upon treatment with spherical gold nanoparticles in concentration 0.5 to 5 ng/mL for 24, 48 and 72 hours. * indicate statistical significance ($p < 0.05$) when compared to untreated control cells



Supplementary Figure 3. Viability of colon cancer SW480 cell lines: control (C), cultured with AuP NPs (NPs), irradiated by 808 nm wavelength (L) and cultured with AuP NPs and irradiated by 808 nm wavelength (NPs+L). Data was considered as significant when * $p < 0.05$ vs. Control (C); # $p < 0.05$ vs. AuP NPs, respectively.

Supplementary Table 1. Minimal concentration required to inhibit viability of 50% cell population (IC₅₀) estimated for cisplatin, paclitaxel, doxorubicin and AuP NPs upon 72h incubation with ovarian cancer SKOV-3 cells

Tested compound	IC ₅₀
cisplatin	6.66 ± 2.17 µg/mL
paclitaxel	1.06 ± 0.58 µg/mL
doxorubicin	28.92 ± 1.71 ng/mL
AuP NPs	1.03 ± 0.19 ng/mL