

Supplementary Information

Microfluidic-assisted formulation of cell membrane-camouflaged anisotropic nanostructures

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Supplementary Figures

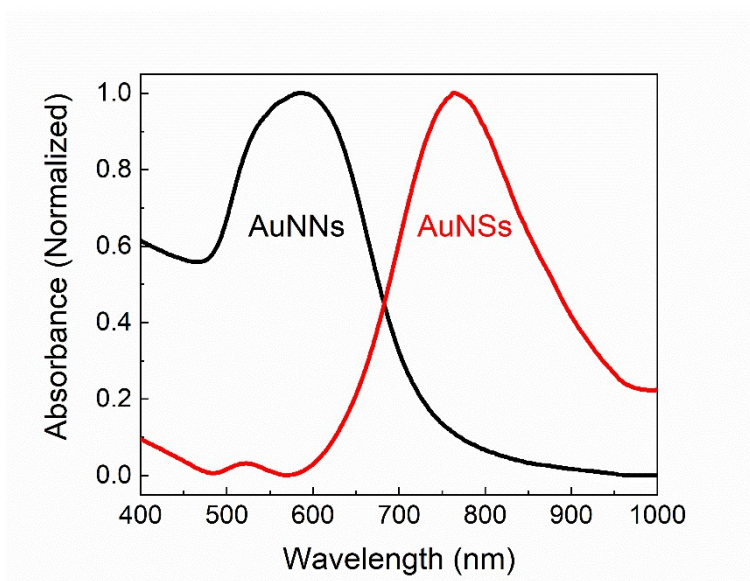


Figure S1. Normalized optical absorbance of the anisotropic Au nanostructures (i.e., AuNNs and AuNSs).

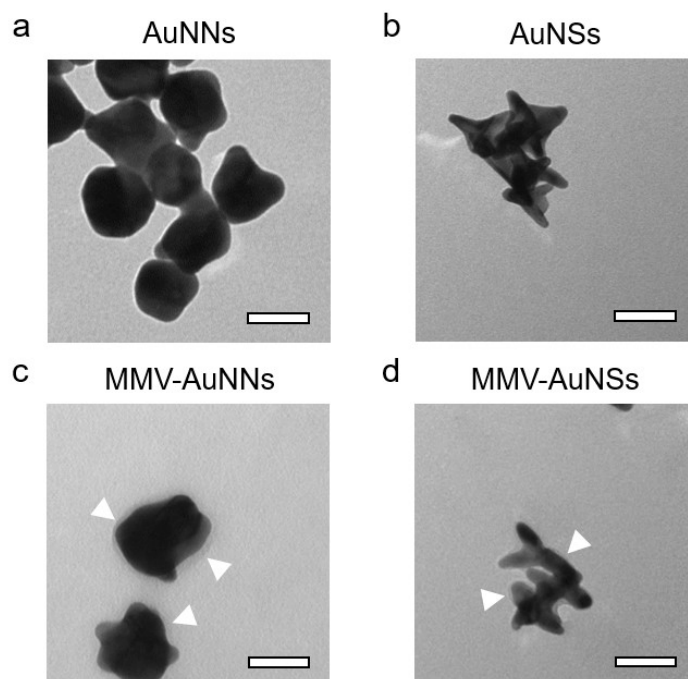


Figure S2. Surface morphology of macrophage membrane vesicle-coated Au nanostructures obtained through sequential physical extrusion. TEM images of: (a) AuNNs, (b) AuNSs, (c) MMV-AuNNs, and (d) MMV-AuNSs. White arrows indicate the macrophage membrane coatings. Scale bars represent 40 nm.

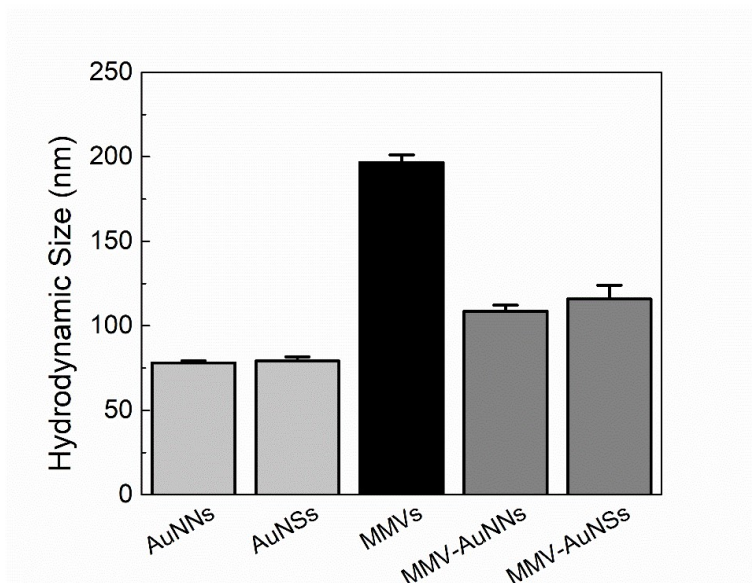


Figure S3. Size of different macrophage membrane vesicle-coated Au nanostructures obtained through sequential physical extrusion. Hydrodynamic size of different uncoated and macrophage membrane vesicle-coated Au nanostructures.

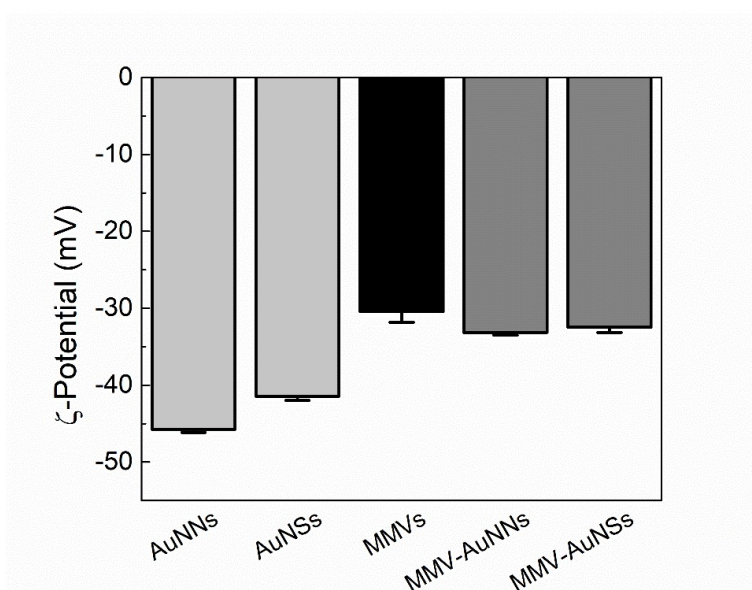


Figure S4. Surface charge of different macrophage membrane vesicle-coated Au nanostructures obtained through sequential physical extrusion. Zeta potential of different uncoated and macrophage membrane vesicle-coated Au nanostructures.

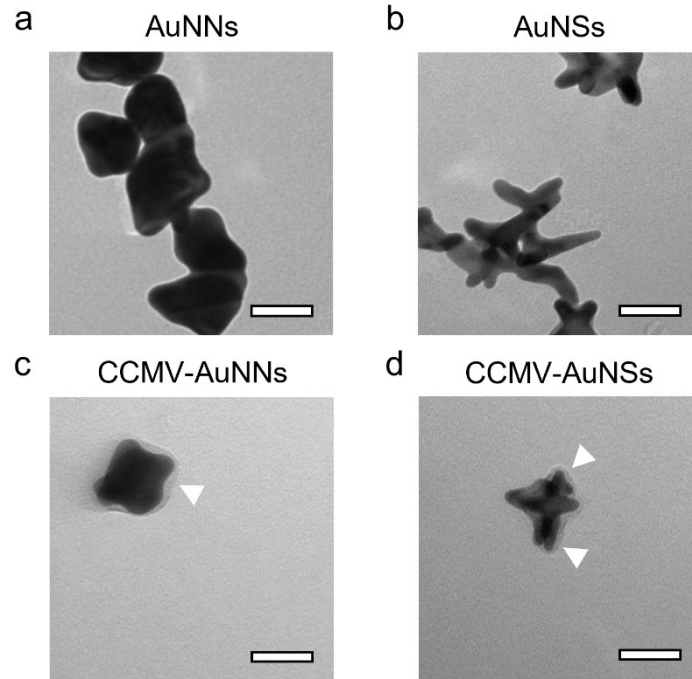


Figure S5. Surface morphology of cancer cell membrane vesicle-coated Au nanostructures obtained through microfluidic-mediated physical mixing. TEM images of: (a) AuNNs, (b) AuNSs, (c) CCMV-AuNNs, and (d) CCMV-AuNSs. White arrows indicate the cancer cell membrane coatings. Scale bars represent 40 nm.

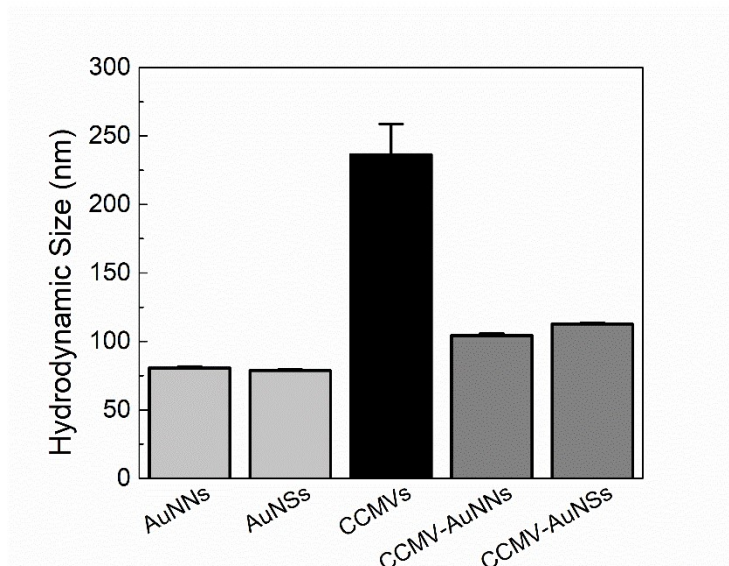


Figure S6. Size of different cancer cell membrane vesicle-coated Au nanostructures obtained through microfluidic-mediated physical mixing. Hydrodynamic size of different uncoated and cancer cell membrane vesicle-coated Au nanostructures.

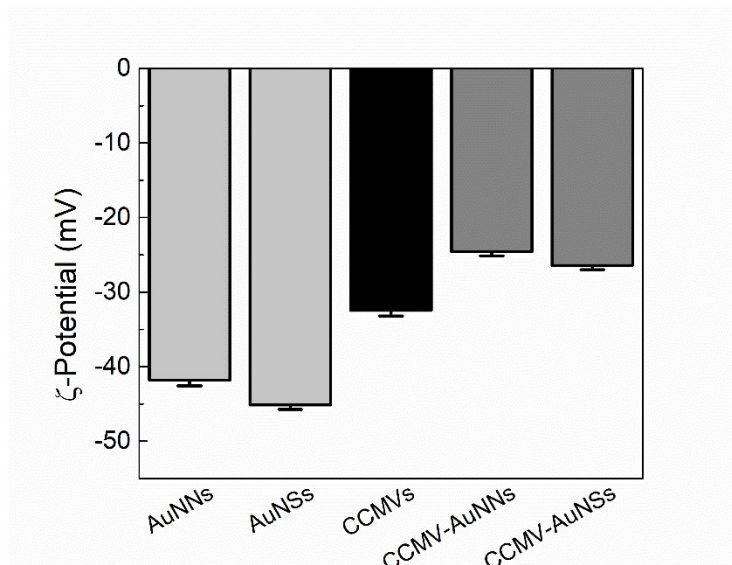


Figure S7. Surface charge of different cancer cell membrane vesicle-coated Au nanostructures obtained through microfluidic-mediated physical mixing. Zeta potential of different uncoated and cancer cell membrane vesicle-coated Au nanostructures.

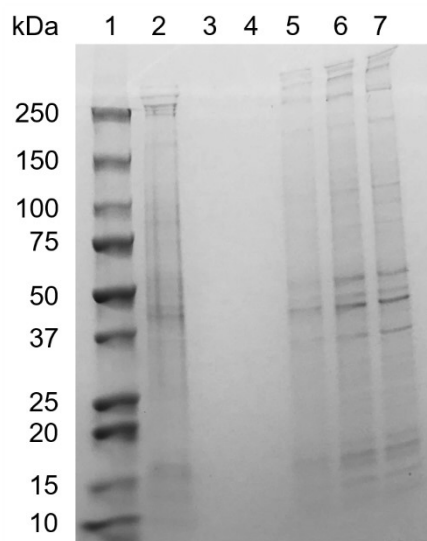


Figure S8. Protein expression of the bare and cancer cell membrane vesicle-encapsulated Au nanostructures. Lanes 1 to 7 of the polyacrylamide gel represent protein marker (1), cell lysate (2), AuNNs (3), AuNSs (4), CCMVs (5), CCMV-AuNNs (6), and CCMV-AuNSs (7), respectively.

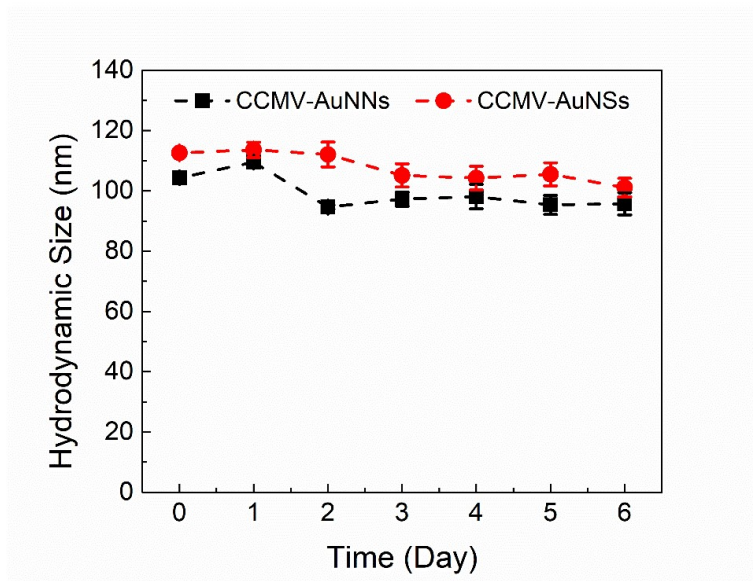


Figure S9. Variation of the hydrodynamic size of cancer cell membrane vesicle-encapsulated Au nanostructures over time.

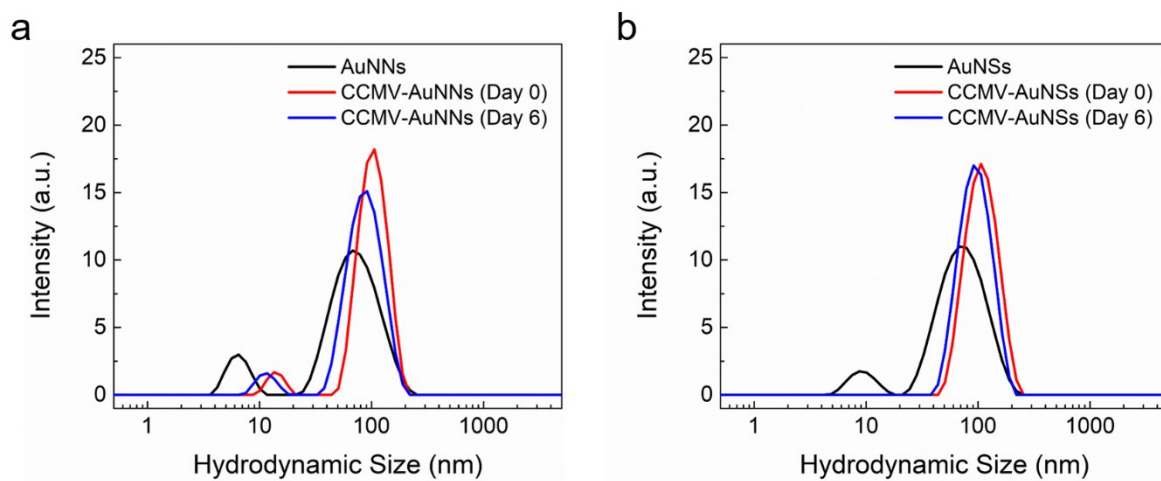


Figure S10. Size distribution of the cancer cell membrane vesicle-encapsulated Au nanostructures over time.

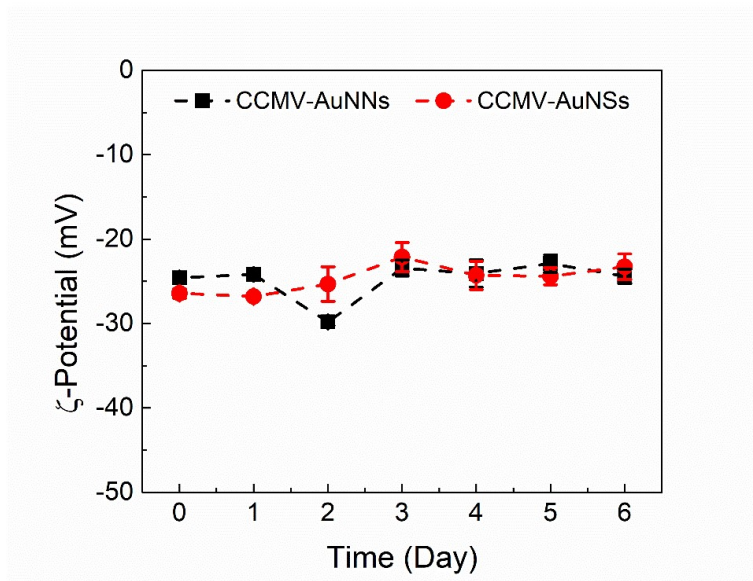


Figure S11. Zeta potential variation of the cancer cell membrane vesicle-encapsulated Au nanostructures over time.

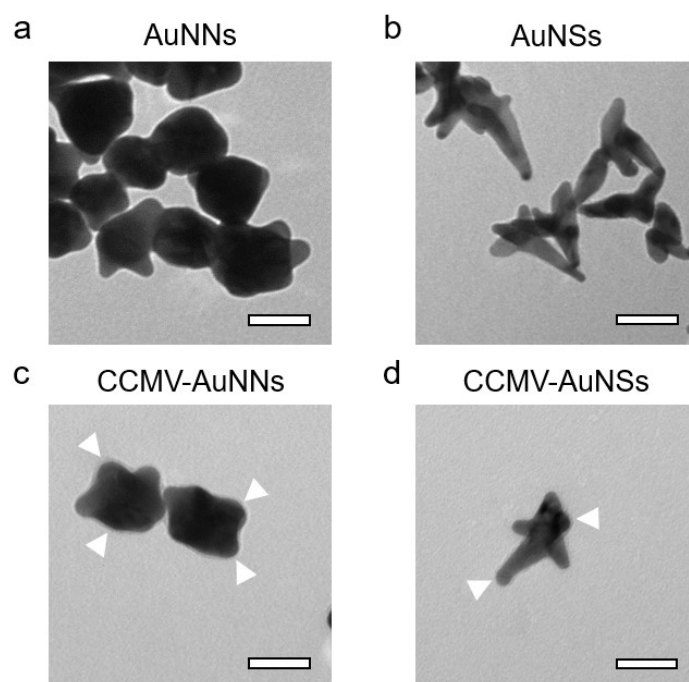


Figure S12. Surface morphology of cancer cell membrane vesicle-coated Au nanostructures obtained through sequential physical extrusion. TEM images of: (a) AuNNs, (b) AuNSs, (c) CCMV-AuNNs, and (d) CCMV-AuNSs. White arrows indicate the cancer cell membrane coatings. Scale bars represent 40 nm.

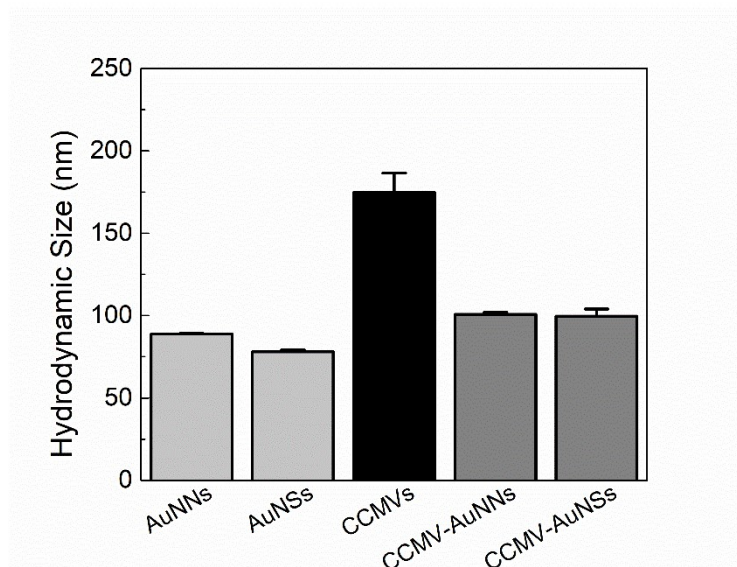


Figure S13. Size of different cancer cell membrane vesicle-coated Au nanostructures obtained through sequential physical extrusion. Hydrodynamic size of different uncoated and cancer cell membrane vesicle-coated Au nanostructures.

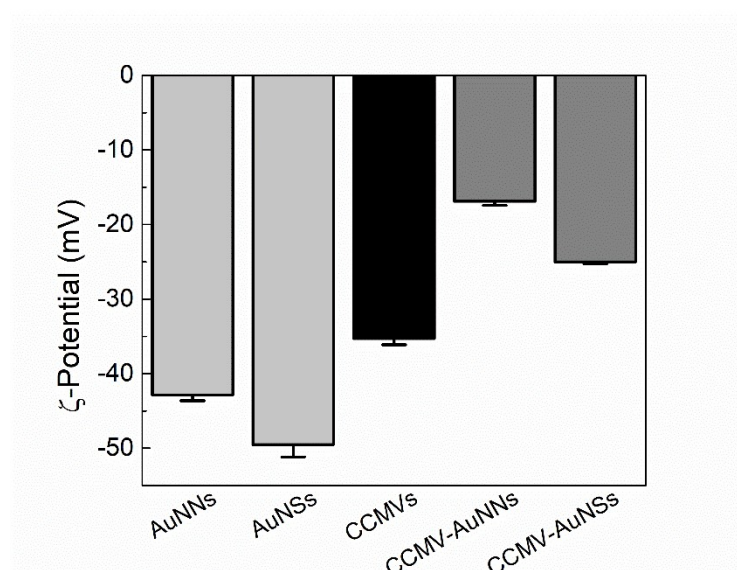


Figure S14. Surface charge of different cancer cell membrane vesicle-coated Au nanostructures obtained through sequential physical extrusion. Zeta potential of different uncoated and cancer cell membrane vesicle-coated Au nanostructures.

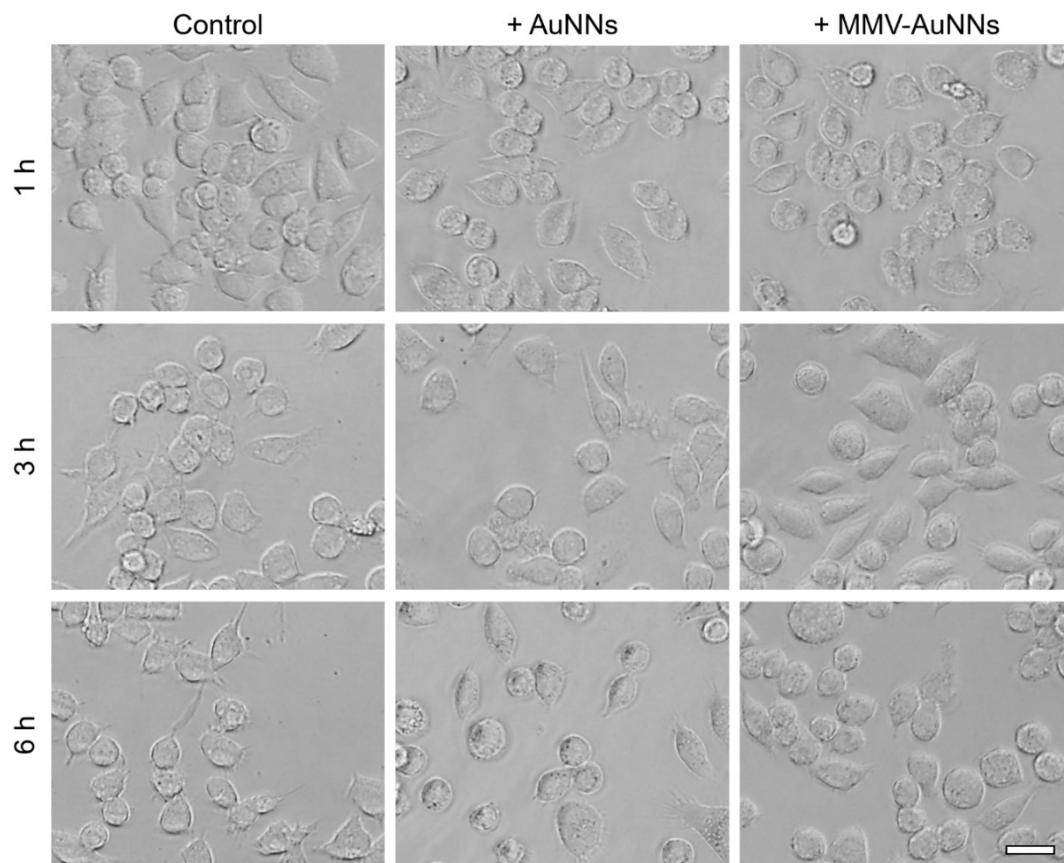


Figure S15. Brightfield microscopy images showing the uptake of AuNNs and MMV-AuNNs by RAW 264.7 macrophages over time (i.e., 1, 3, and 6 h). Scale bar represents 20 μm .

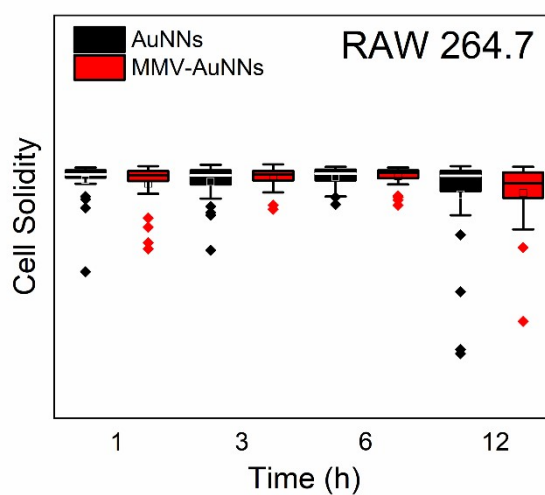


Figure S16. Solidity of RAW 264.7 macrophages after different Au nanostructure treatments over time. $n = 30$ cells.

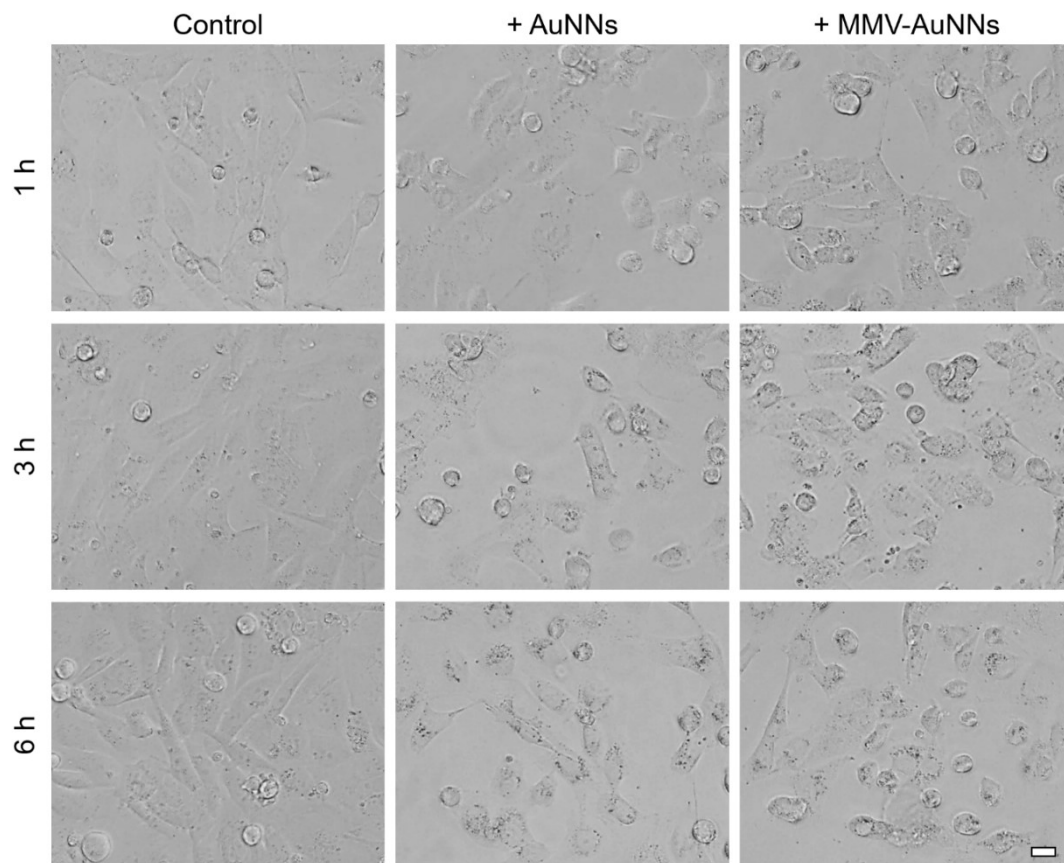


Figure S17. Brightfield microscopy images showing the uptake of AuNNs and MMV-AuNNs by MDA-MB-231 breast cancer cells over time (i.e., 1, 3, and 6 h). Scale bar represents 20 μm .

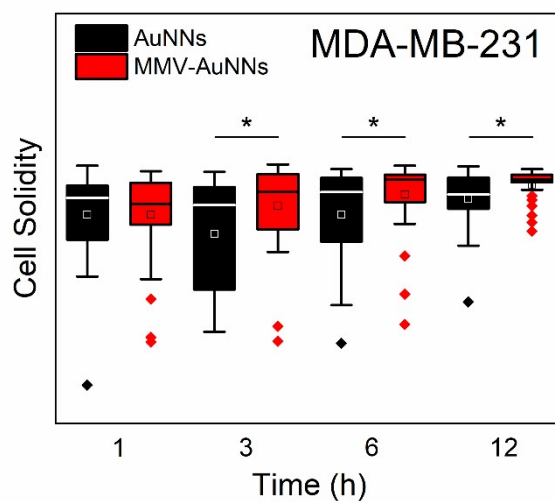


Figure S18. Solidity of MDA-MB-231 breast cancer cells after different Au nanostructure treatments over time. $n = 30$ cells. * $p < 0.05$ based on the non-parametric Mann-Whitney test.