

Supplementary Information

Initiation of Protective Autophagy in Hepatocytes by Gold Nanorod Core/ Silver Shell Nanostructures

Haiyun Li,^{a,c} Jiaqi Chen,^{a,c} Huizhen Fan,^{a,c} Rui Cai,^{a,c} Xinshuang Gao,^{a,c} Dejing Meng,^{a,c} Yinglu Ji,^{a,c} Chunying Chen,^{b,c} Liming Wang,^{b,c,*} Xiaochun Wu^{a,c,*}

^a CAS Key Laboratory of Standardization and Measurement for Nanotechnology & CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology, Beijing 100190, China

^b CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, Institute of High Energy Physics and National Center for Nanoscience and Technology of China, Beijing 100049, China

^c University of Chinese Academy of Science, Beijing 100049, China

* Corresponding authors: wuxc@nanoctr.cn, wangliming@ihep.ac.cn

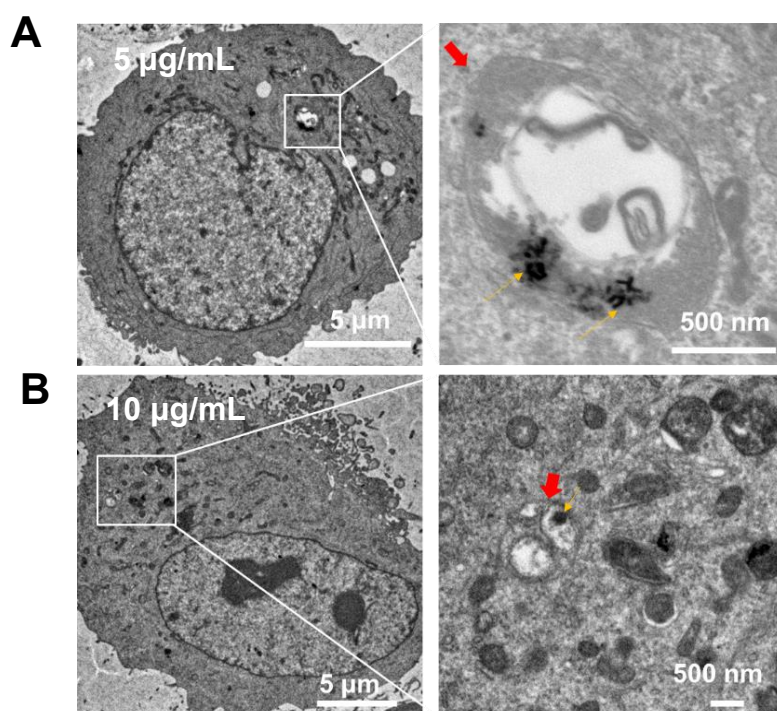


Figure S1. TEM observation of the autolysosomes. Subcellular locations of Au@Ag NRs and the formation of autolysosomes after the exposure of HepG2 cells to 5 µg/mL (A) and 10 µg/mL (B) Au@Ag NRs for 12 h. The yellow arrows indicate the Au@Ag NRs, and the red arrows indicate the structures that the fusion of autophagosome and lysosome to form autolysosome.

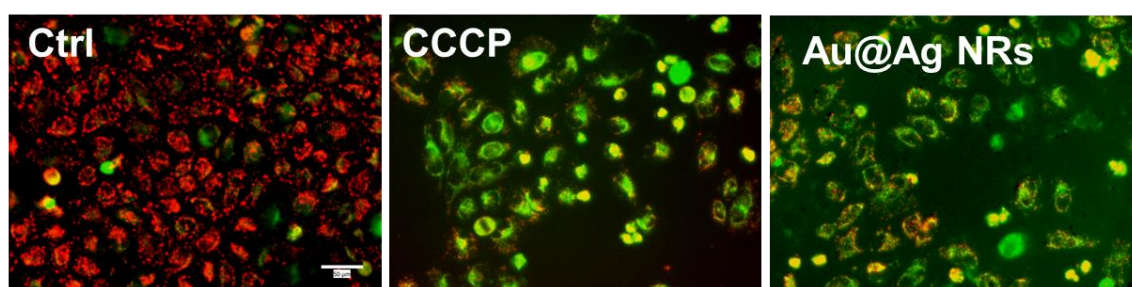


Figure S2. Mitochondrial membrane potential assay after 24 h exposure to Au@Ag NRs containing 5 µg/mL silver. CCCP-treated cells are used as the positive control. The scale bar represents 50 µm.

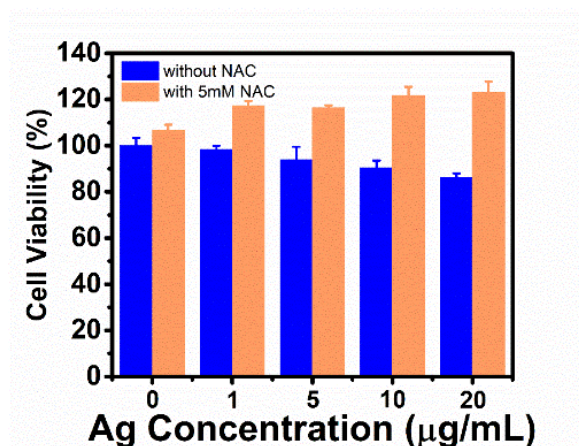


Figure S3. Influence of NAC and the concentration of Au@Ag NRs on the viability of HepG2 cells. The cells are exposed to Au@Ag NRs for 24 h with or without NAC at 5 mM.

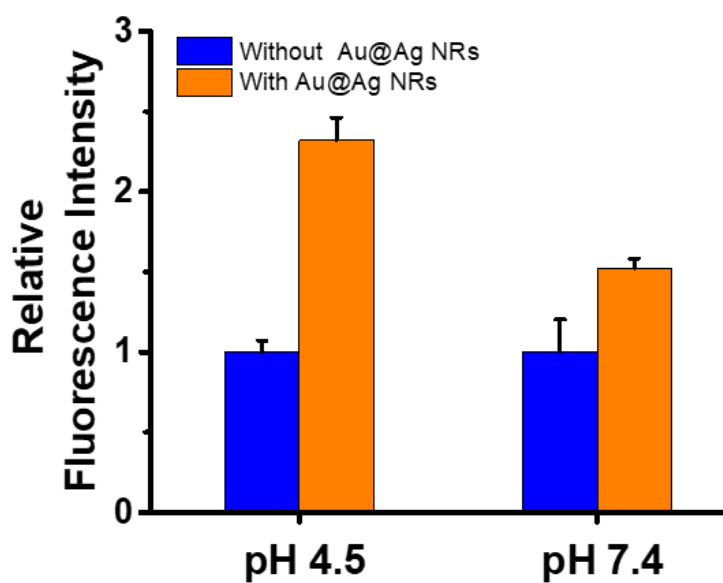


Figure S4. The of ROS level by Au@Ag NRs within the solutions containing different pH values.

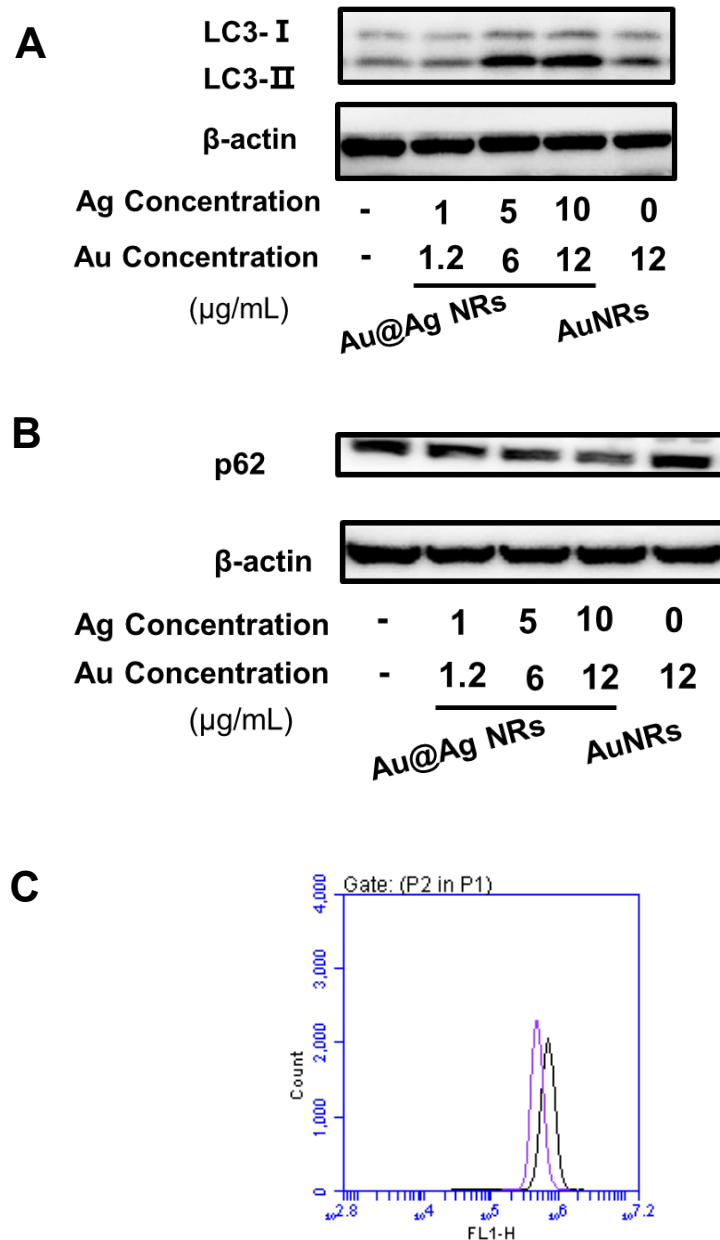


Figure S5. Autophagy induced by AuNRs. (A) Impact of Au@Ag NRs and AuNRs on the LC3-II expression of HepG2 cells at the protein level after 24 h exposure, as detected by western blotting. (B) p62 level of HepG2 cells after treated with Au@Ag NRs or AuNRs for 24 h, detected by western blotting. (C) Quantitative analysis for the change of pH in the cells by flow cytometry after they are exposed to AuNRs or not.