Electronic Supplementary Material (ESI) for Nanoscale.

Selective extracellular arginine deprivation by a single injection of cellular non-uptake arginine deiminase nanocapsules for sustained tumor inhibition

Lijun Yang[2], Yin Wang[1], Xubo Yuan[3], Peifeng Li[1], Hongzhao Qi[1,*]

1. Institute of Translational Medicine, The Affiliated Hospital of Qingdao University, College of Medicine, Qingdao University, Qingdao 266021, China
2. College of Materials Science and Engineering, Qingdao University of Science and Technology, Qingdao 266042, China
3. Tianjin Key Laboratory of Composite and Functional Materials, School of Materials Science and Engineering, Tianjin University, Tianjin 300072, China

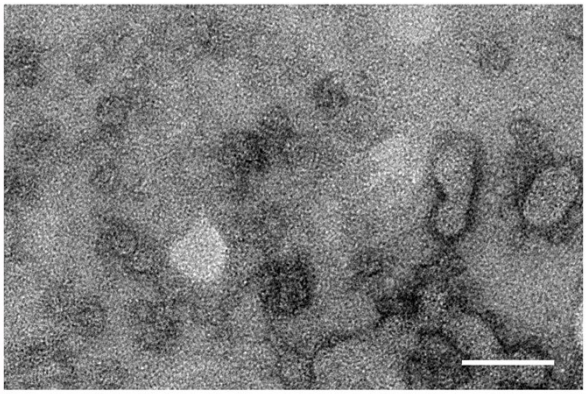

Figure S1. The representative TEM images of native ADI.

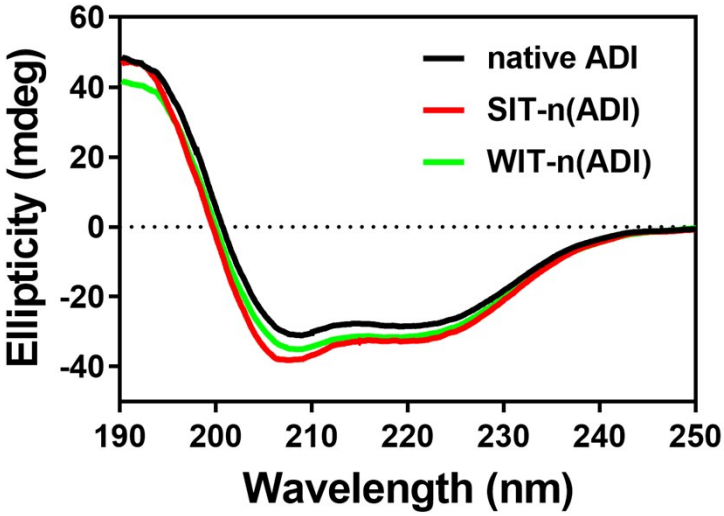

Figure S2. Circular Dichroism (CD) analysis of native ADI, SIT-n(ADI), and WIT-n(ADI).

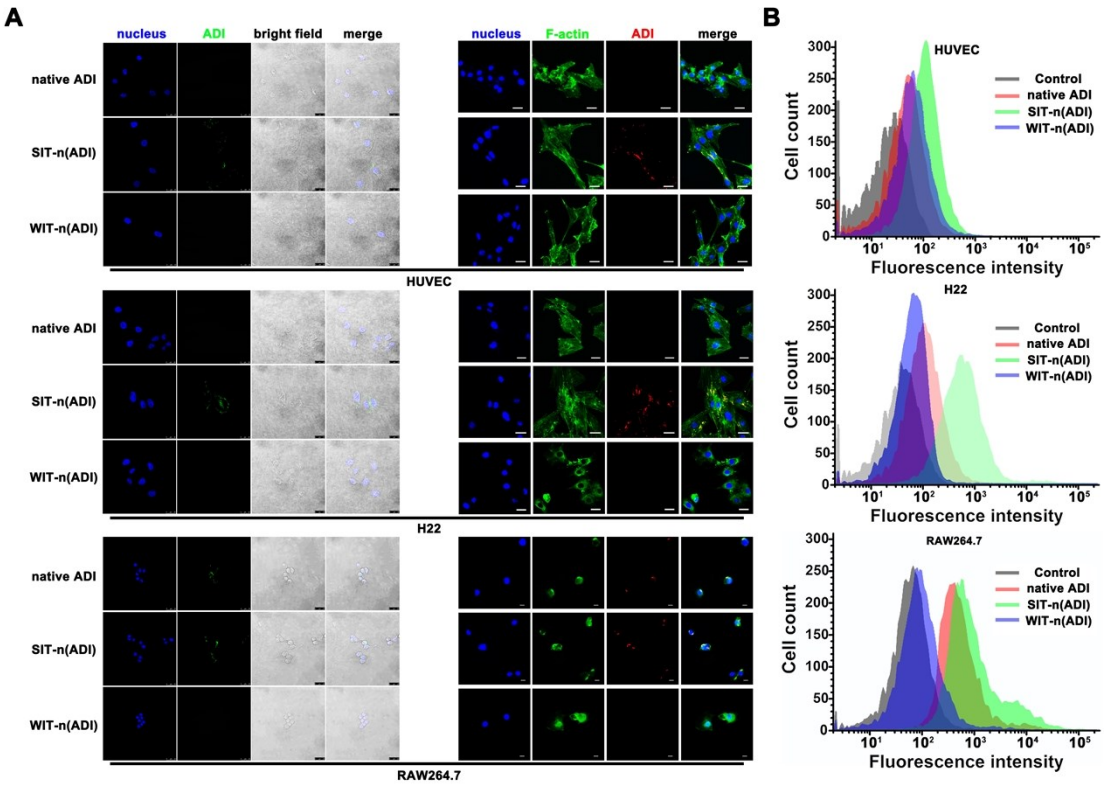

Figure S3. The cellular uptake of WIT-n(ADI). (A) Fluorescence microscopy images of HUVEC cells, H22 cells, and RAW264.7 cells after 24 h of incubation with native ADI, SIT-n(ADI), and WIT-n(ADI). Left: ADI was labeled with FITC (green). The cells were stained with 4′,6-diamidino-2-phenylindole (DAPI, blue, for nuclei). Right: ADI was labeled with Rhodamine B (red). The cells were counterstained with DAPI and FITC-Phalloidin (green, for F-actin). (B) The cellular uptake of native ADI, SIT-n(ADI), and WIT-n(ADI) by cells were assessed by flow cytometry. Rhodamine B signal was detected.

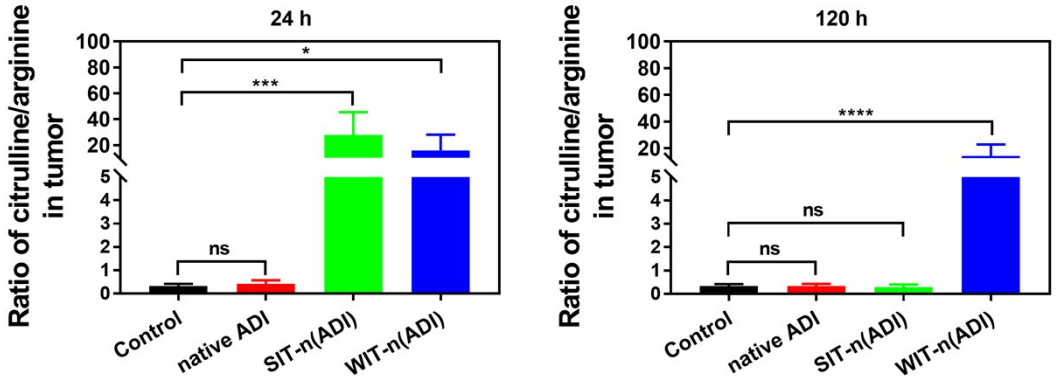

Figure S4. Mice were injected with PBS, native ADI, SIT-n(ADI), and WIT-n(ADI). The ADI equivalent was ~1 mg. After 24 h and 120 h, the ratio of citrulline to arginine in tumor tissues was measured.

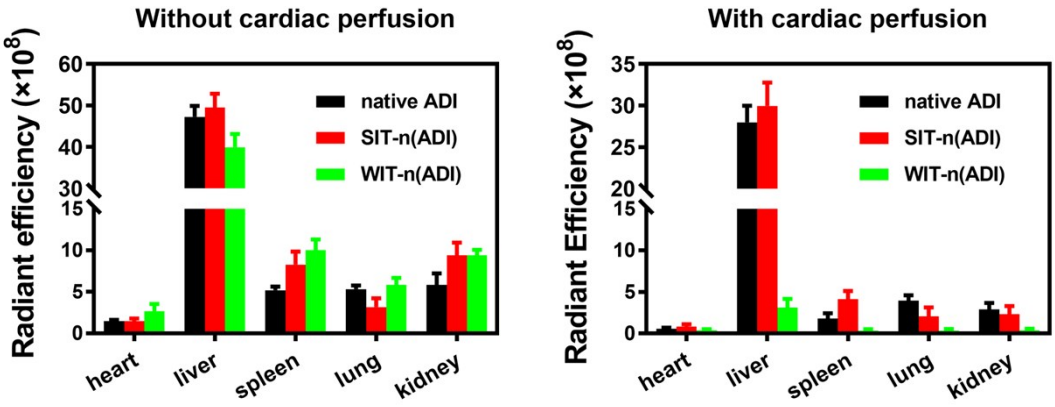

Figure S5. The radiant efficiency of Cy5.5-labeled native ADI, SIT-n(ADI), and WIT-n(ADI) in organs harvested from mice with or without cardiac perfusion.

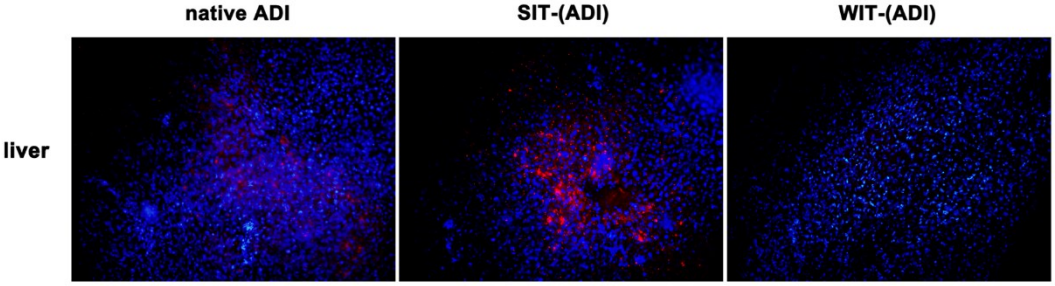

Figure S6. The accumulation of Cy5.5-labeled native ADI, SIT-n(ADI), and WIT-n(ADI) in the liver section of mice treated with cardiac perfusion was evaluated using a fluorescence microscope.

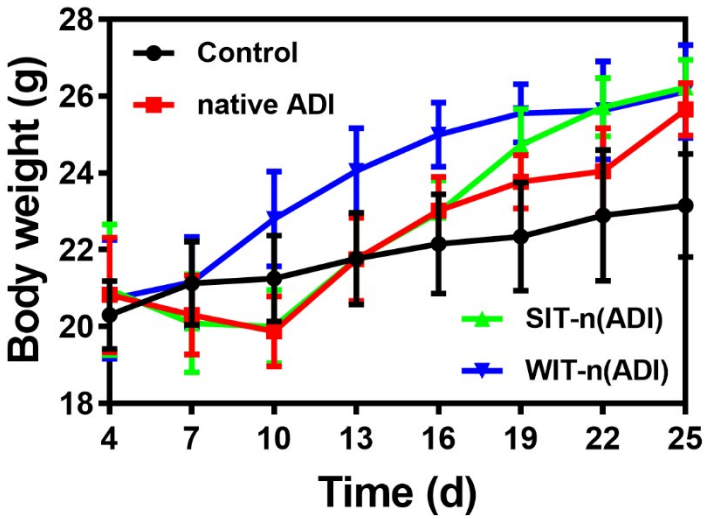

Figure S7. The body weights of mice in different groups were measured every 3 days for 21 consecutive days.