Supporting Information

Protein-directed synthesis of Bi_2S_3 nanoparticles as an efficient contrast agent for visualizing gastrointestinal tract

Yan Zu, Yuan Yong, Xiao Zhang, Jie Yu, Xinghua Dong, Wenyan Yin, Liang Yan*, Feng Zhao, Zhanjun Gu, Yuliang Zhao

CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, Institute of High Energy Physics, and National Center for Nanoscience Technology of China, Chinese Academy of Sciences, Beijing 100049, People's Republic of China

*Corresponding author:
E-mail: yanliang@ihep.ac.cn (L. Yan)

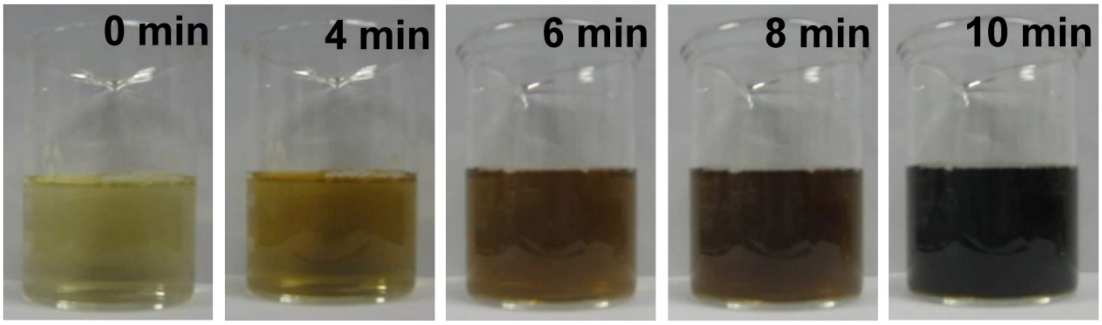

Fig. S1 Color changes of the reaction solution during the formation process of BSA@Bi_2S_3 NPs.

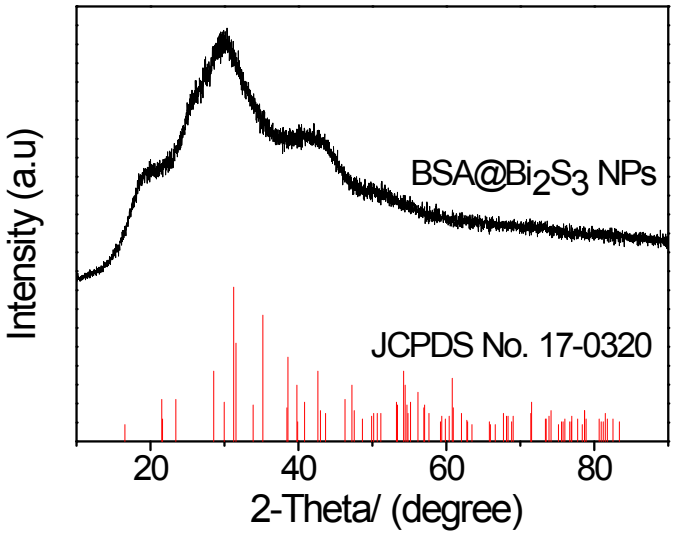

Fig. S2 XRD pattern of BSA@Bi_2S_3 NPs.

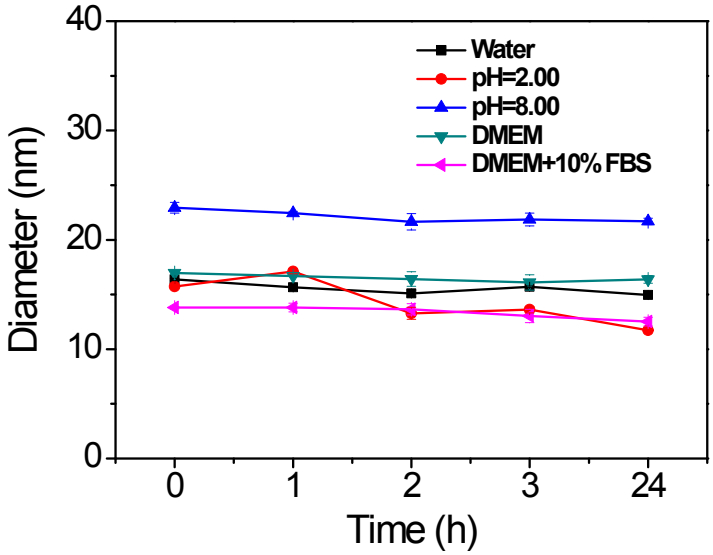

Fig. S3 Hydrodynamic diameters of BSA@Bi_2S_3 NPs after dissolving in water, buffer solutions (pH 2.00 and 8.00), DMEM and DMEM containing 10% FBS at different time points (0, 1, 2, 3 and 24 h).

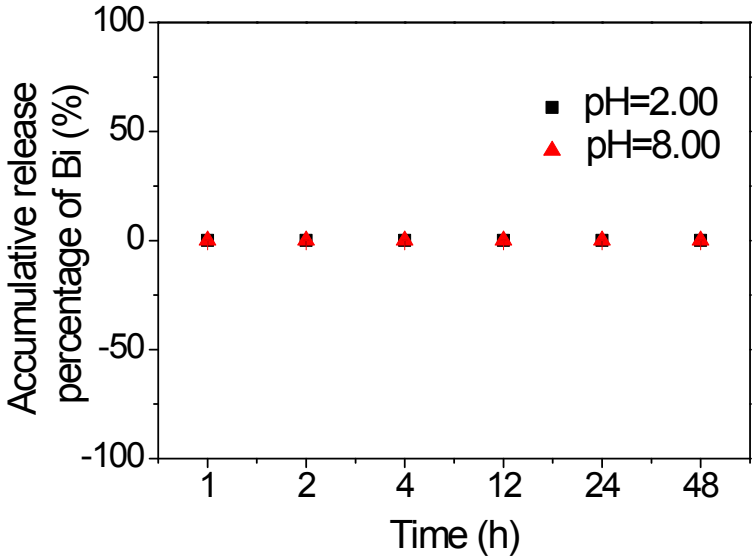

Fig. S4 Accumulative release profiles of BSA@Bi_2S_3 NPs at pH 2.00 and 8.00 buffer solutions during 48 h, showing no obvious released Bi^{3+} in the above two pH solutions, and demonstrating the desired chemical stability of BSA@Bi_2S_3 NPs.

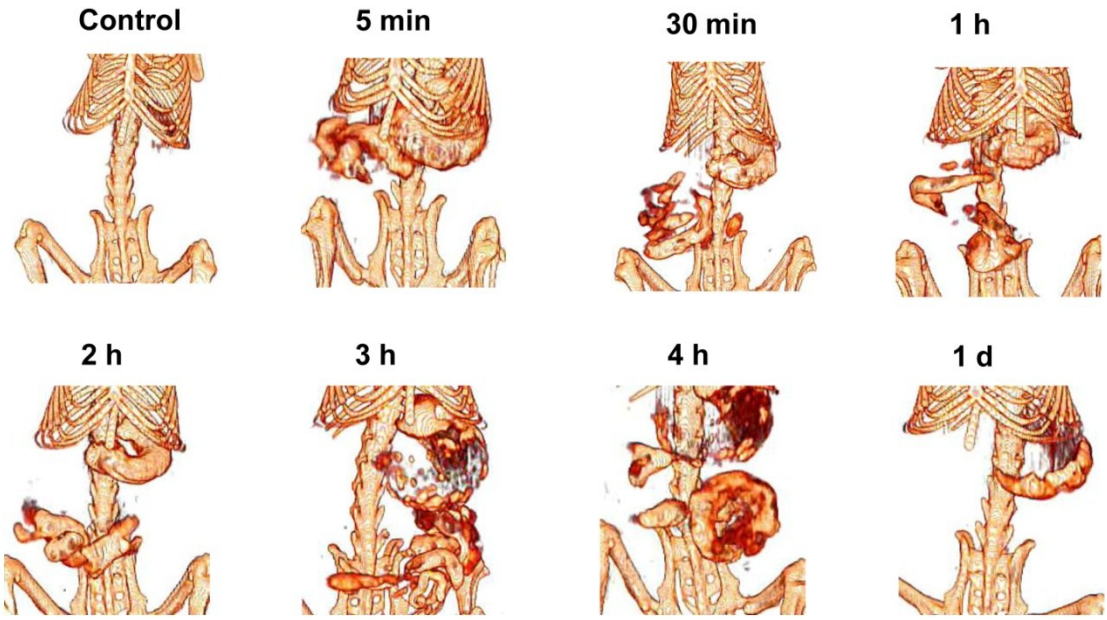

Fig. S5 CT imaging of mouse GI tract by using $BaSO_4$ as contrast agents with the concentration of 20 mg/mL.

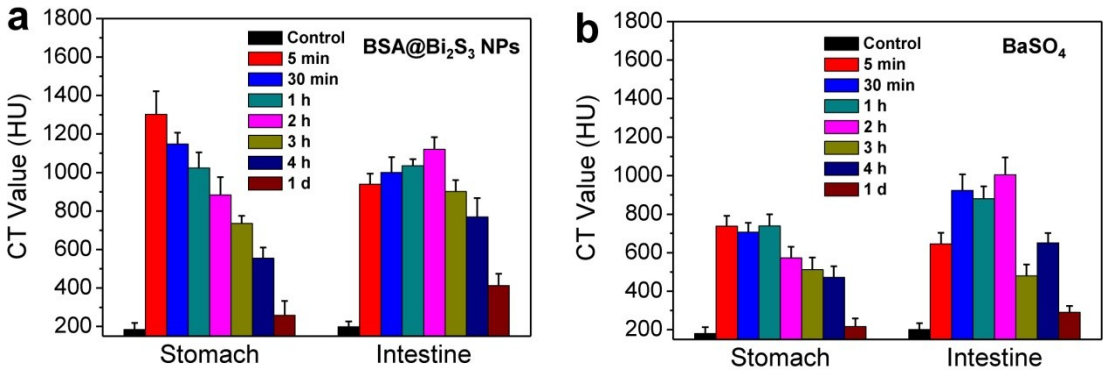

Fig. S6 The CT values (HU) of the stomach and intestine of mice after oral administration of BSA@Bi_2S_3 NPs (20 mg/mL) (a) and $BaSO_4$ (b) at different time points.

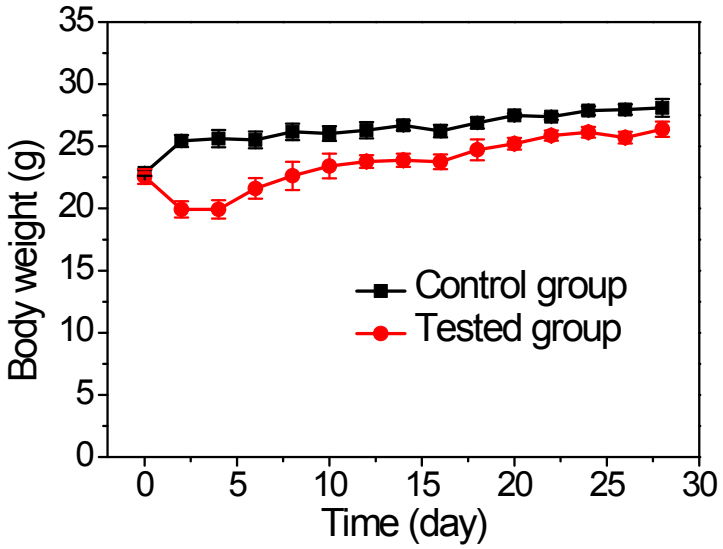

Fig. S7 Body weight changes in the control and tested mice, respectively.

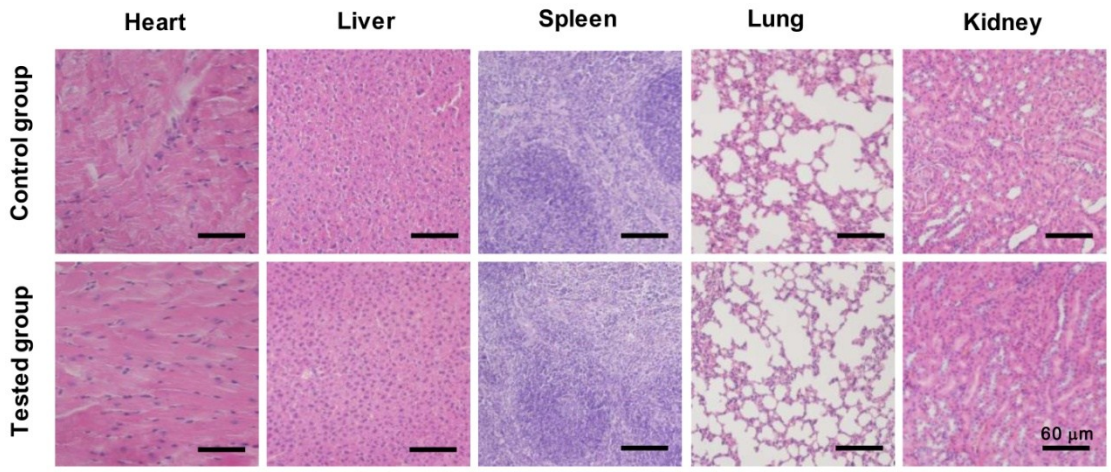

Fig. S8 H&E stained images of main organs collected from mice 28 days after orally administration of BSA@Bi_2S_3 NPs with the concentration of 20 mg/mL.

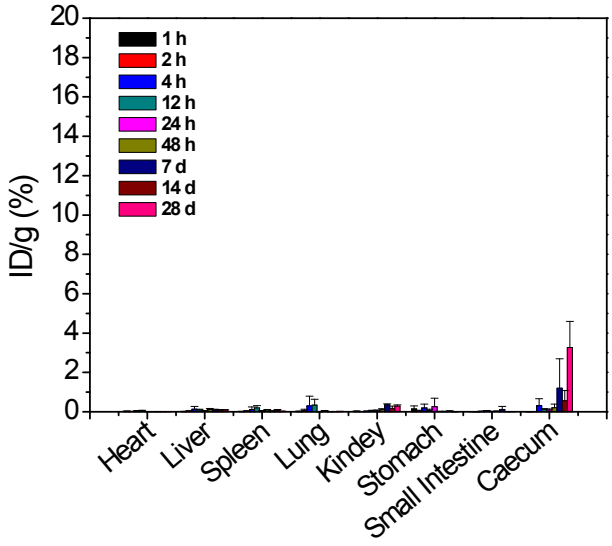

Fig. S9 Biodistribution of bismuth element from BSA@Bi_2S_3 NPs at various tissues of the mice at different intervals after oral administration.