Electronic Supplementary Material (ESI) for Analyst.

Electronic Supplementary Information

Rapid and simple detection of ascorbic acid and alkaline phosphatase via controlled generation of silver nanoparticles and selective recognition

Piaopiao Chen,[a] Shixin Yan,[a] Erica Sawyer,[a] Binwu Ying,[a] Xiawei Wei,[a] Zhengzhi Wu,*[b,c,d] and Jia Geng*[a]

[a] Department of Laboratory Medicine, State Key Laboratory of Biotherapy, West China Hospital, Sichuan University and Collaborative Innovation Center for Biotherapy, Chengdu, Sichuan, 610041, China

[b] The Fist Affiliated Hospital of Shenzhen University, Shenzhen, 518035, China

[c] The Eighth Affiliated Hospital of Sun Yat-sen University, Shenzhen, 518033, China

[d] Shenzhen Institute of Geriatrics, Shenzhen, 518020, China

*Corresponding authors. E-mails: geng.jia@scu.edu.cn; szwzz001@email.szu.edu.cn.

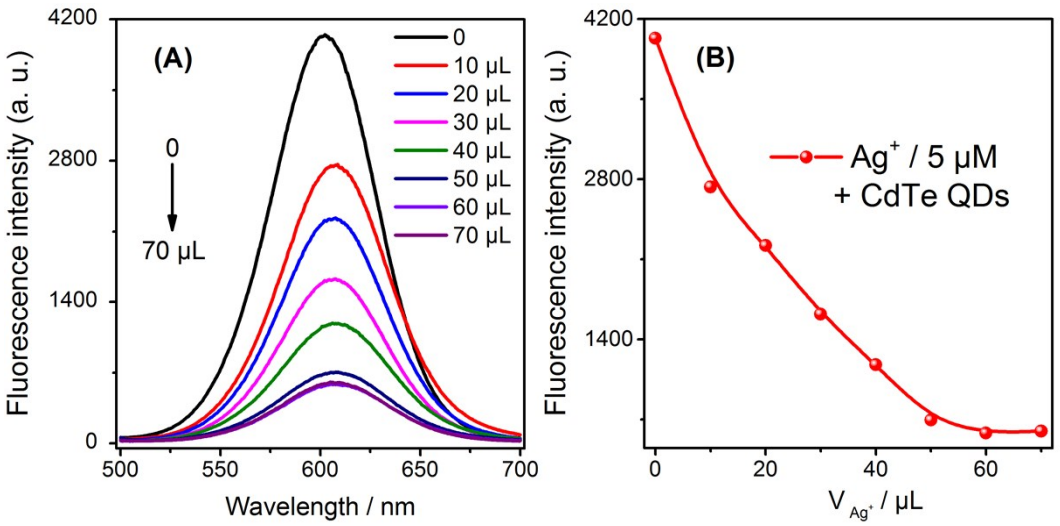

Fig. S1 Optimization of Ag^+ amount in the selective quenching reaction. Error bars were estimated from three replicate measurements.

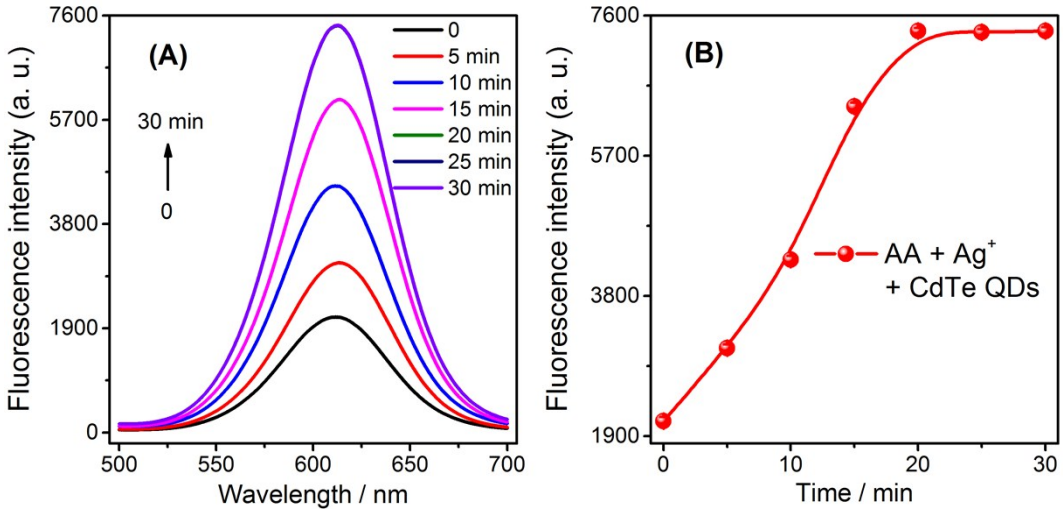

Fig. S2 Optimization of the duration of the formation of silver nanoparticles (Ag NPs) by reducing Ag^+ with AA (ascorbic acid). Error bars were estimated from three replicate measurements.

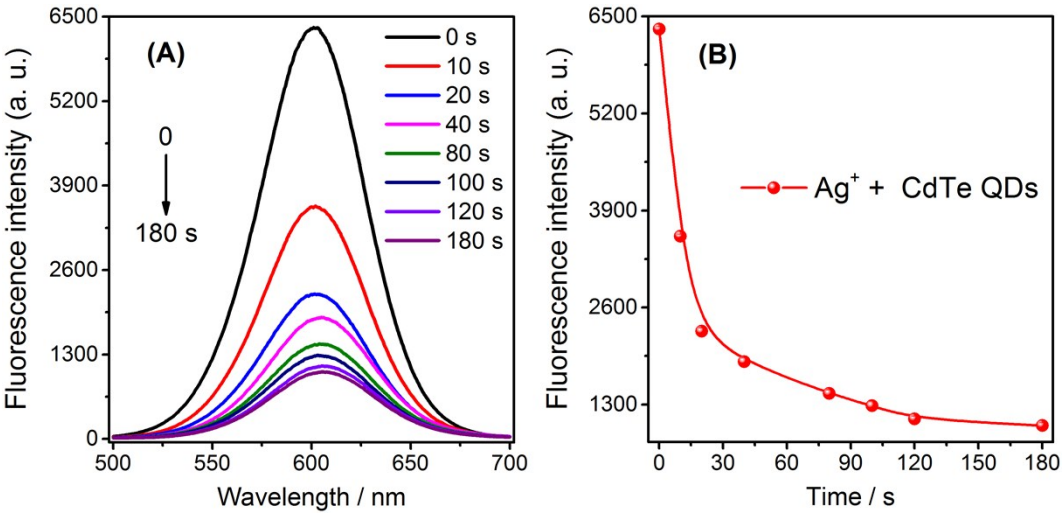

Fig. S3 Optimization of the selective quenching reaction time between CdTe QDs and Ag^{+}. Error bars were estimated from three replicate measurements.

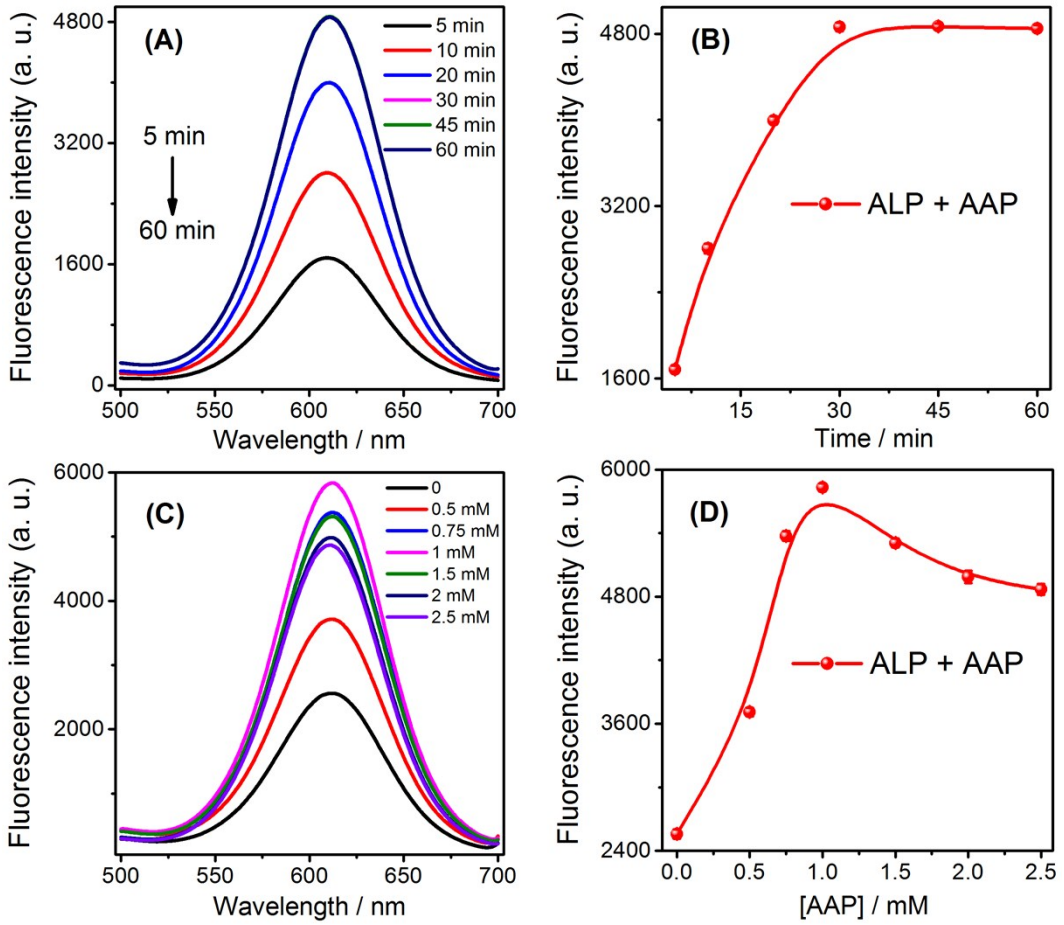

Fig. S4 Optimization of the detection conditions for alkaline phosphatase. (A) and (B) Reaction time between ALP and AAP. (C) and (D) Concentration of AAP. Error bars were estimated from three replicate measurements.

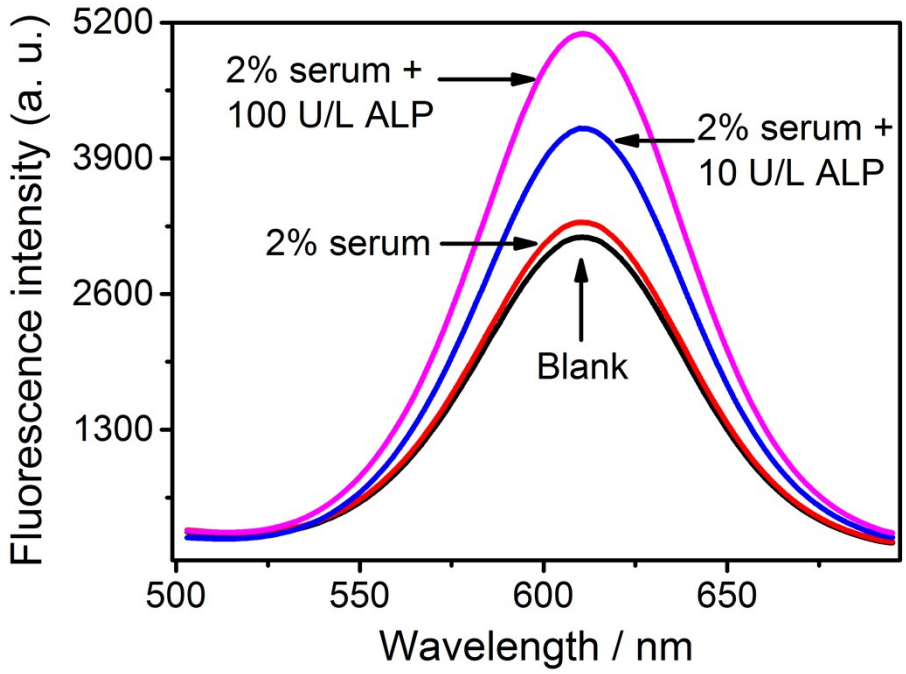

Fig. S5 The application of the sensor to a complex sample matrix of 2% serum. The fluorescence response curves are shown for the buffer solution (black curve), 2% serum (red curve), 2% serum with 10 U/L ALP (blue curve), and 2% serum with 100 U/L ALP (pink curve).