

## **Supplementary information**

### **Quantitative and qualitative analyses of metal ions in food and water by using a multicolor sensor array and chemometrics**

Lijuan Huang, Zinan Zhang, Huanchun Xing, Xin Sui, Jun Yang\*, Yongan Wang\*

State Key Laboratory of Toxicology and Medical Countermeasures, Institute of Pharmacology and  
Toxicology, Academy of Military Medical Sciences, Beijing, China

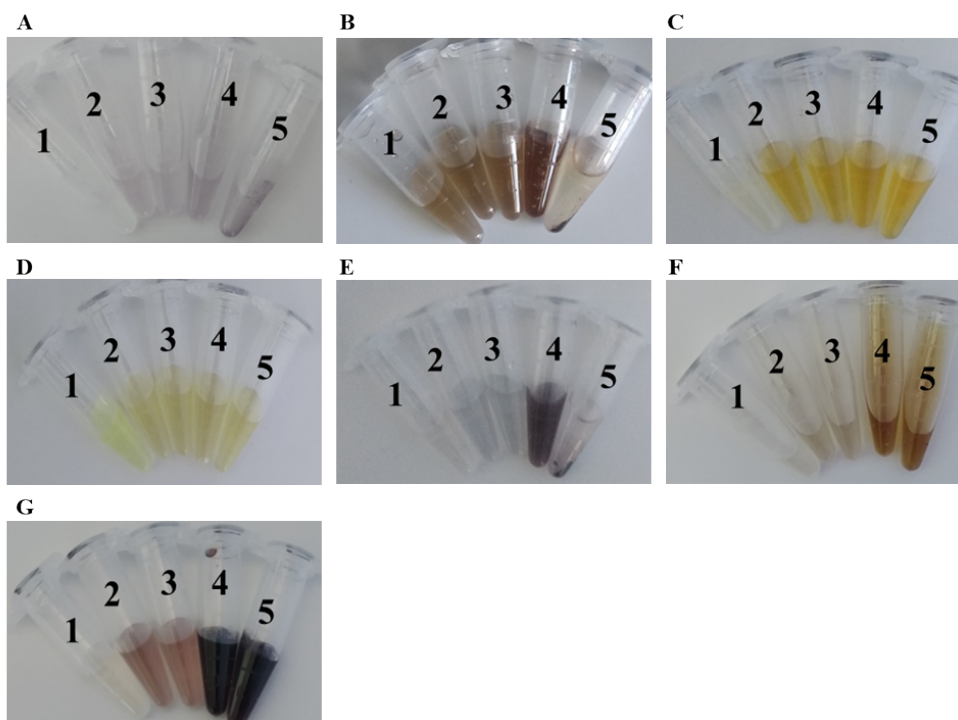


Figure. S1. Photographs of 4-CN (A), AEC (B), OPD (C), ABTS (D), DAB (E), benzidine (F), 5-ASA (G) chromogenic solution in presence of different nanoenzymes (1: none, 2: AuNPs, 3: AuNPs-ssDNA, 4: AuNPs-ssDNA- $M^{n+}$ , and 5: AuNPs-ssDNA- $M^{n+}$  with centrifugation)

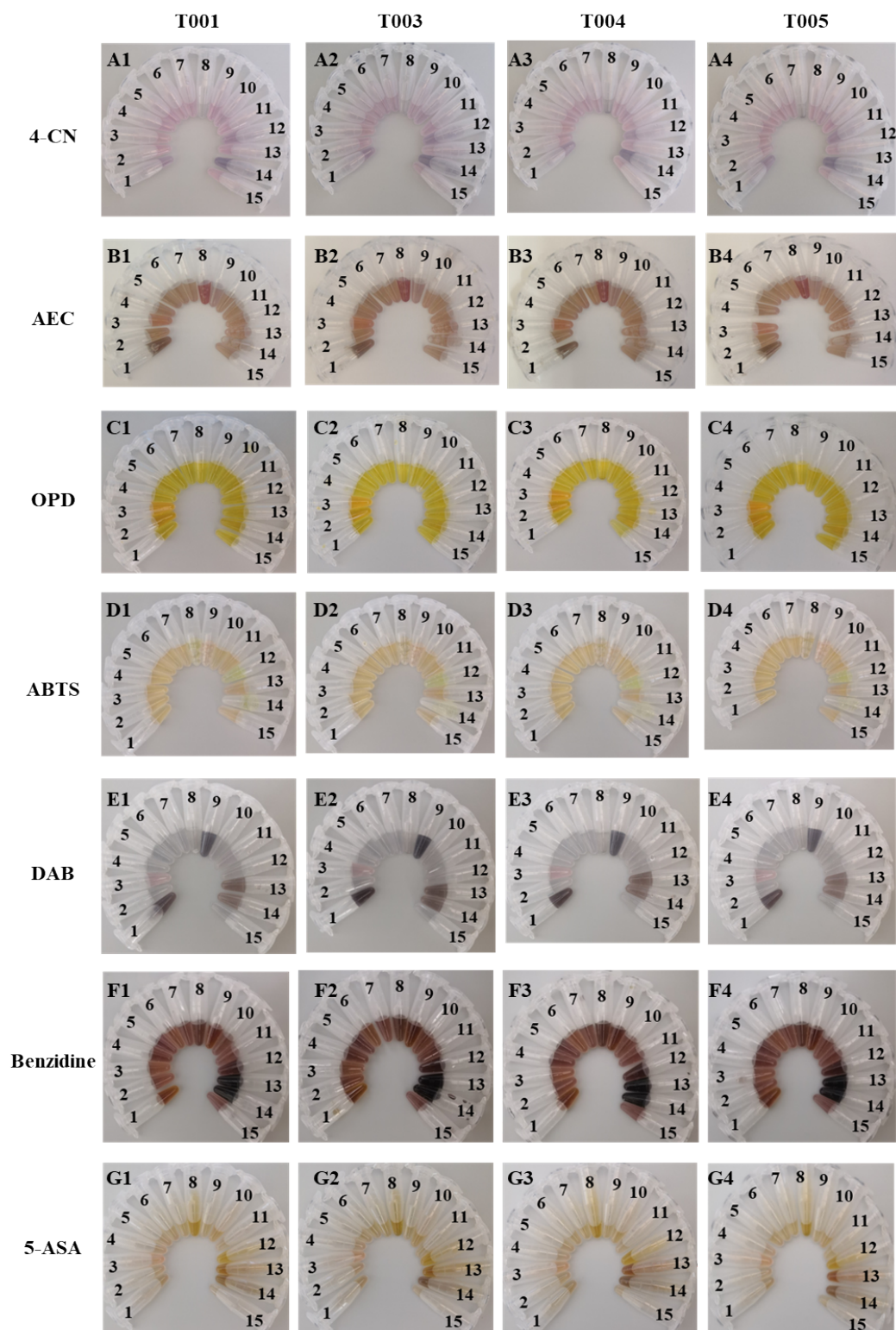


Fig. S2. Photographs of the 4-CN (A), AEC (B), OPD (C), ABTS (D), DAB (E), benzidine (F), 5-ASA (G) chromogenic solution in presence of different ssDNA (A-G) and metal ions (1:  $\text{Cu}^{2+}$ , 2:  $\text{Fe}^{2+}$ , 3:  $\text{Fe}^{3+}$ , 4:  $\text{Mn}^{2+}$ , 5:  $\text{Ni}^{2+}$ , 6:  $\text{Zn}^{2+}$ , 7:  $\text{Cd}^{2+}$ , 8:  $\text{Cr}^{3+}$ , 9:  $\text{Co}^{2+}$ , 10:  $\text{Ba}^{2+}$ , 11:  $\text{K}^{+}$ , 12:  $\text{Tl}^{+}$ , 13:  $\text{Pb}^{2+}$ , 14:  $\text{Hg}^{2+}$  and 15:  $\text{H}_2\text{O}$ )

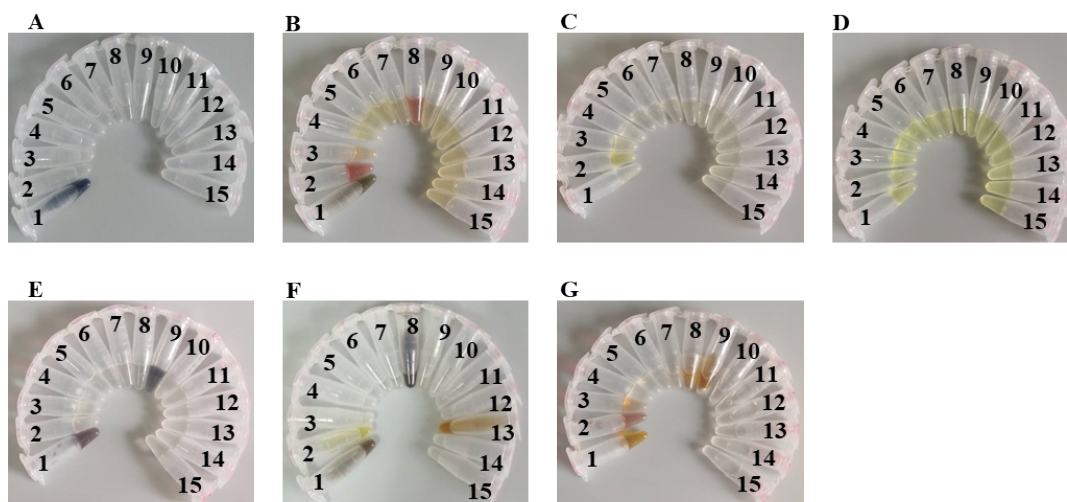


Fig. S3. Photographs of the 4-CN (A), AEC (B), OPD (C), ABTS (D), DAB (E), benzidine (F), 5-ASA (G) chromogenic solution in presence of different metal ions (1:  $\text{Cu}^{2+}$ , 2:  $\text{Fe}^{2+}$ , 3:  $\text{Fe}^{3+}$ , 4:  $\text{Mn}^{2+}$ , 5:  $\text{Ni}^{2+}$ , 6:  $\text{Zn}^{2+}$ , 7:  $\text{Cd}^{2+}$ , 8:  $\text{Cr}^{3+}$ , 9:  $\text{Co}^{2+}$ , 10:  $\text{Ba}^{2+}$ , 11:  $\text{K}^{+}$ , 12:  $\text{Tl}^{+}$ , 13:  $\text{Pb}^{2+}$ , 14:  $\text{Hg}^{2+}$  and 15:  $\text{H}_2\text{O}$ ) without AuNPs-ssDNA.