

**Figure S1.** Effect of CoOOH concentration on fluorescence quenching of N, S-GQDs.

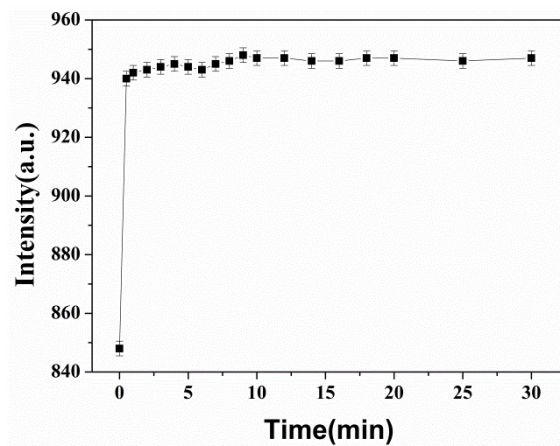


Figure S2. Effect of reaction time on N, S-GQDs/CoOOH fluorescence recovered by AA.

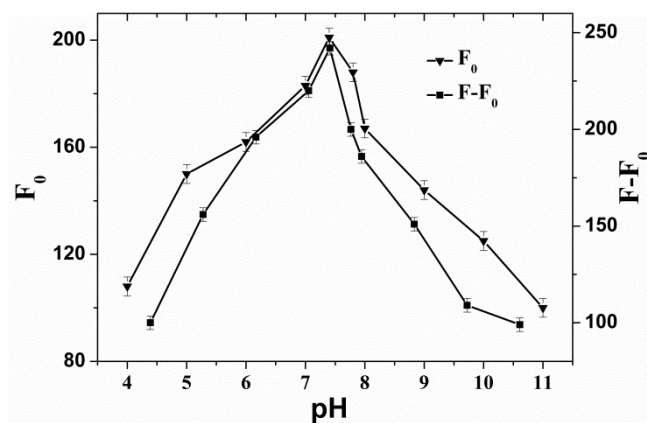


Figure S3. Effect of pH value on the fluorescence responses of N, S-GQDs/CoOOH with/without AA.

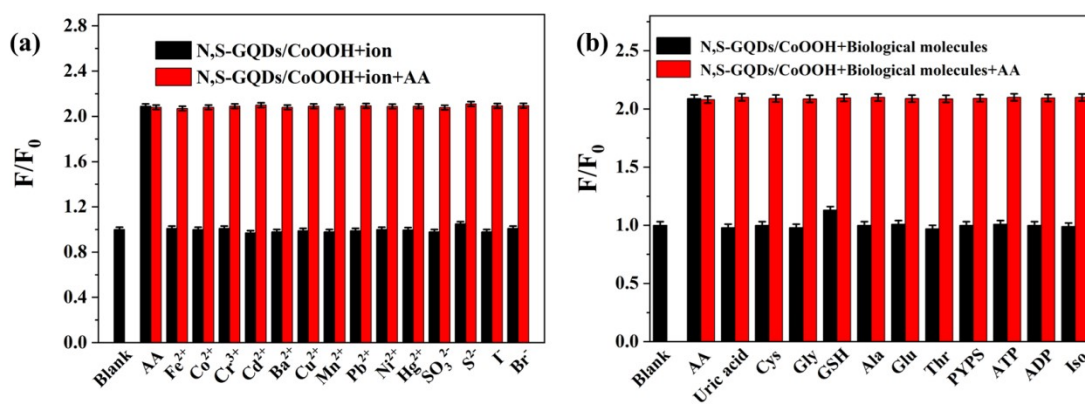
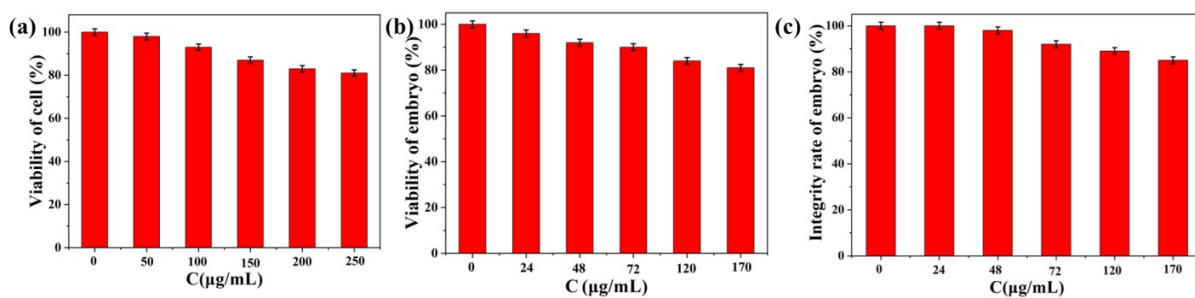
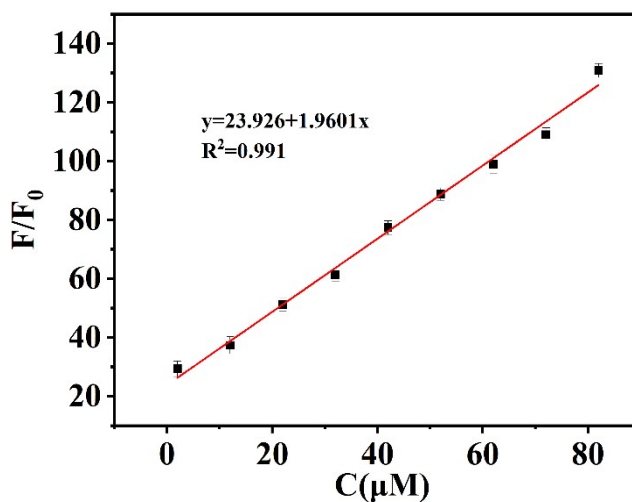


Figure S4. (a) Fluorescence response of different ions to N, S-GQDs/CoOOH and N, S-GQDs/CoOOH +AA. (b) Fluorescent response of common biological disturbance substances to N, S-GQDs/CoOOH and N, S-GQDs/CoOOH +AA.

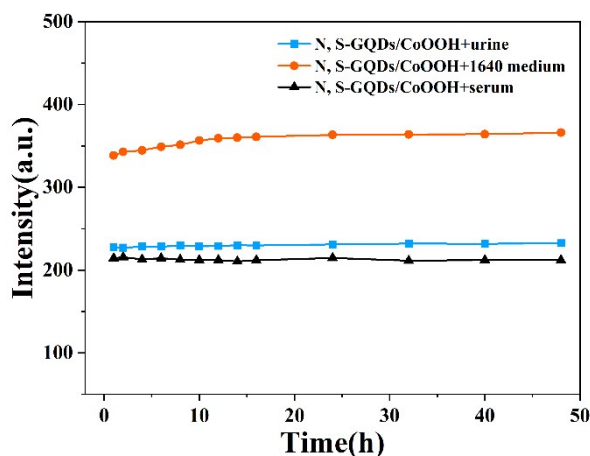


**Figure S5.** (a)Effect of different concentrations of N, S-GQDs/CoOOH on the viability of MCF-7 cells, (b)Effects of different concentrations of N, S-GQDs/CoOOH on zebrafish embryo survival, (c) Effects of different concentrations of N,S-GQDs/CoOOH on zebrafish teratogenesis.

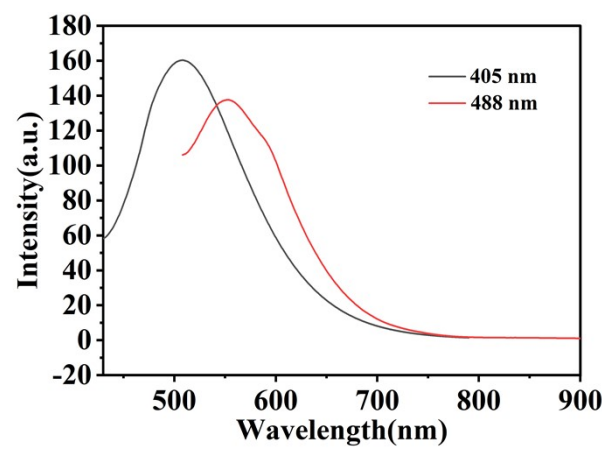


**Figure S6.** Plot of  $F/F_0$  versus the concentration of AA. F and  $F_0$  are the fluorescence intensity of N, S-GQDs/CoOOH (0.7 mg/mL) with or without AA, respectively.

The detection limit (LOD) was found to be 48.3 nM, as determined by the equation  $LOD = 3\sigma/k$ . ( $\sigma=0.032$ ,  $k = 1.9601$ ,  $\sigma$  is the standard deviation of background,  $k$  represents the slope of the equation)



**Figure S7.** The fluorescence stability of N, S-GQDs/CoOOH in urine, 1640 medium and serum solution.



**Figure S8.** The fluorescence spectrum of N, S-GQDs/CoOOH at various excitation wavelengths.

