Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

A fluorescence sensing platform of theophylline based on the interaction of RNA aptamer with graphene oxide

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Contents:

1. UV−vis absorption

We have carried out UV−vis absorption to further characterize the conjugation of QDs-RNA1 and GO. The UV-vis absorption peak of GO was about 230 nm, QDs-RNA1 was about 400 nm and after the conjugation, the absorption peaks of QDs-RNA1 and GO are not obvious because they may be overlapped.

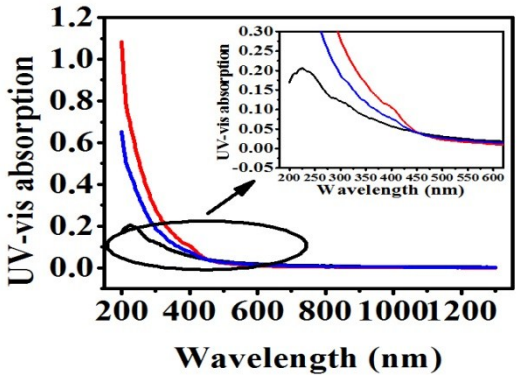

Figure S1. UV-vis absorption of GO (black line), QDs-RNA1 (red line) and QDs-RNA1-GO (blue line).

2. Zeta potential analysis

We also carried out Zeta potential analysis. QDs-RNA1 and QDs-RNA1-GO was -15.12, -10.12 and -30.20 mV, which also proved the conjugation of QDs-RNA1 and GO.

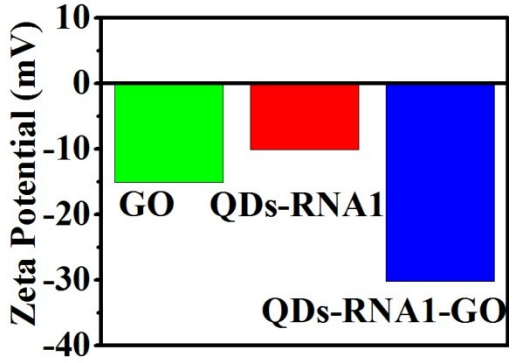

Figure S2. Zeta potential of GO (green bar), QDs-RNA1 (red bar) and QDs-RNA1-GO (blue bar).

3. Optimizing experimental conditions

We optimized the experimental conditions including reaction time and temperature of the entire reaction system on the fluorescence intensity. The result showed the best reaction time is 100 minutes and the best temperature is 37℃.

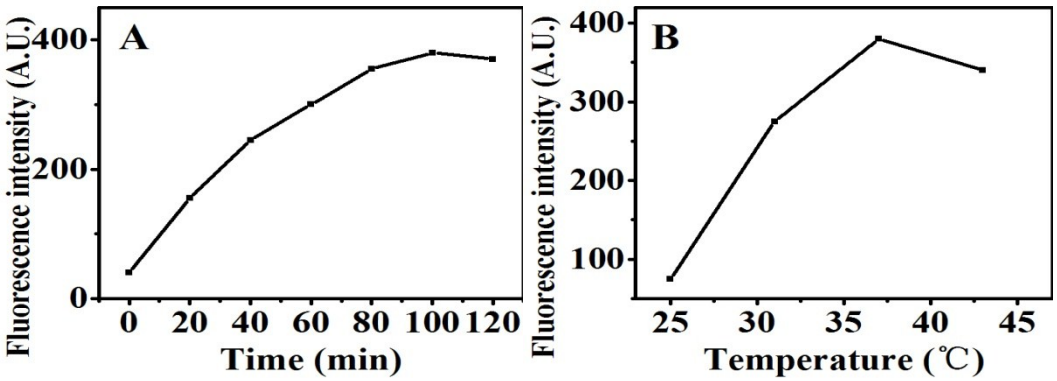

Figure S3. Optimizing experiment of reaction time (A) and temperature of the entire reaction system (B) on the fluorescence intensity.