Electronic Supplementary Material (ESI) for Analytical Methods.


# Hydrothermal synthesis of *Auricularia auricula* Derived Nitrogen, Phosphorus-doped Carbon Dots and Application in Ag(I), 4-Nitrophenol Detection and Bioimaging

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Table S1 Effects of different reaction times and reaction temperature on the quantum yields of *Aa* N,P-CDs

| Time (h) \ Temperature (℃) | 160 | 180 | 200 | 220 | 240 |
|---|---|---|---|---|---|
| 2 | 1.28 | 1.44 | 1.68 | 1.71 | 1.76 |
| 6 | 1.81 | 2.03 | 2.20 | 2.43 | 2.61 |
| 8 | 2.42 | 2.41 | 5.19 | 5.38 | 5.62 |
| 12 | 3.66 | 3.72 | 7.25 | 6.53 | 5.64 |
| 24 | 4.08 | 4.83 | 6.31 | 5.84 | 4.71 |

Table S2 Park equation of 4-NP detection by *Aa* N,P-CDs

| 4-NP concentration(μM) | *Aex* | *Aem* | *Fcor/Fobsd* |
|---|---|---|---|
| 0 | 0.266 | 0.088 | 1.482 |
| 5 | 0.319 | 0.095 | 1.530 |
| 10 | 0.376 | 0.103 | 1.624 |
| 15 | 0.393 | 0.097 | 1.683 |
| 20 | 0.439 | 0.103 | 1.709 |
| 25 | 0.484 | 0.105 | 1.753 |

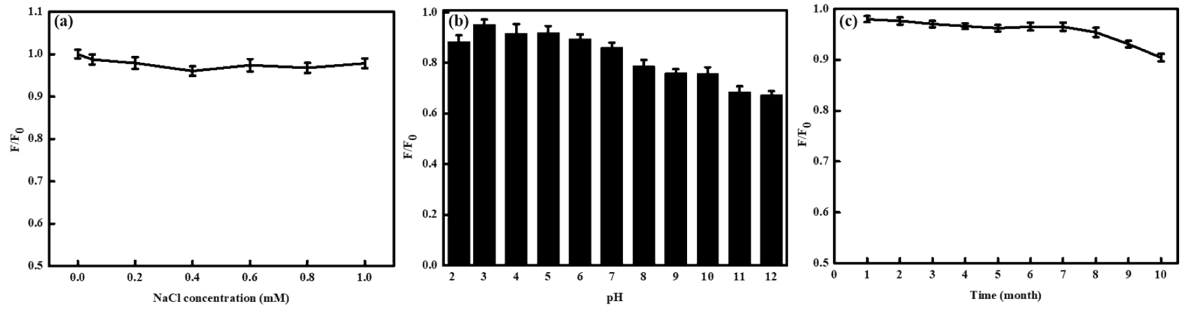


Fig. S1 Fluorescence intensity of *Aa* N,P-CDs at different NaCl concentrations ranging from 0 to 1 M (a), pH value from 2.2 to 12 (b) and time (c)

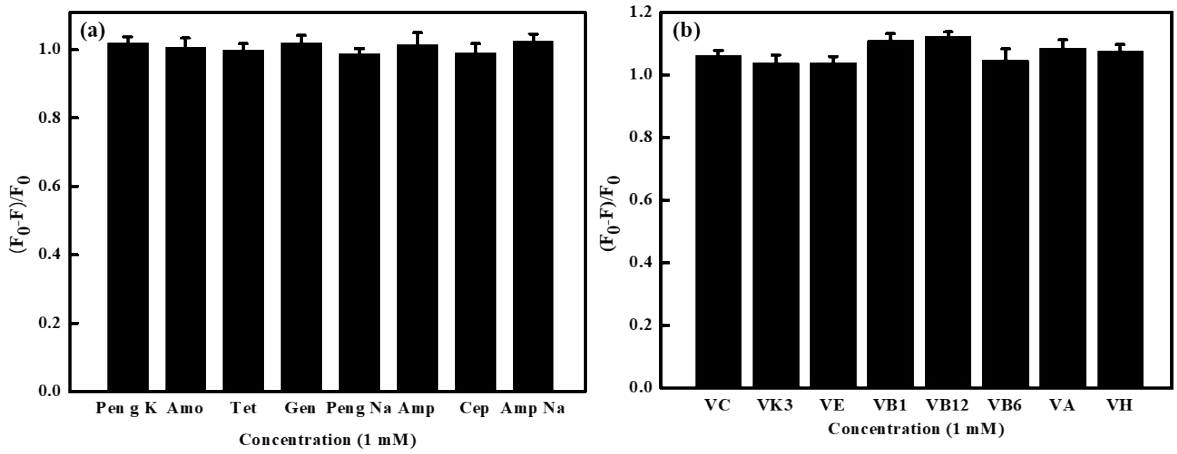


Fig. S2 Fluorescence quenching efficiency of antibiotics (a) and vitamins (b) to the *Aa* N,P-CDs

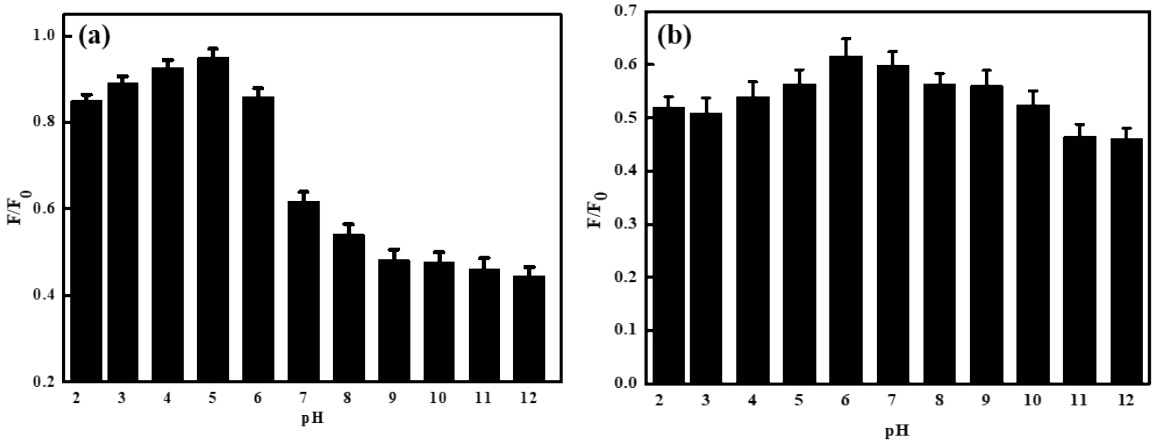


Fig. S3 Effect of sample pH value on the detection of 4-NP (a) and Ag(l) (b)

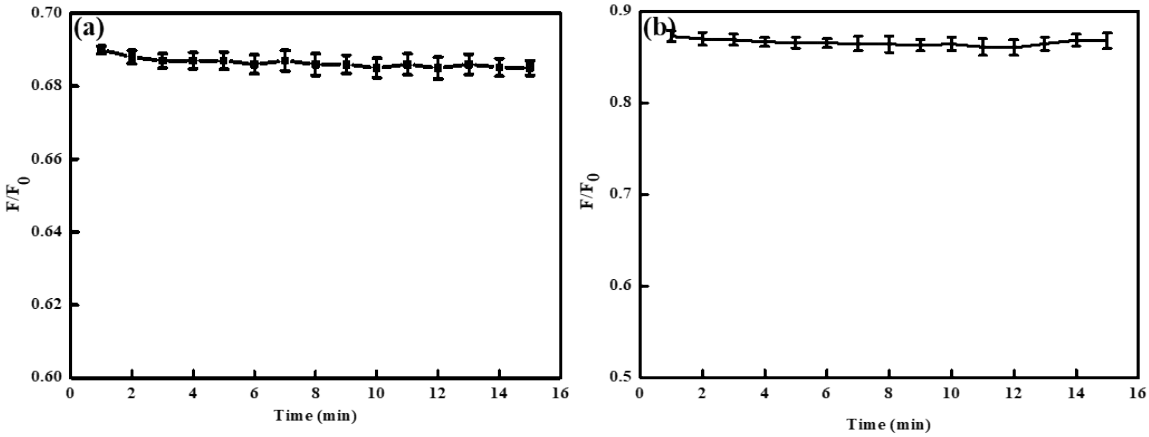


Fig. S4 Effect of reaction time on the detection of 4-NP (a) and Ag(l) (b)

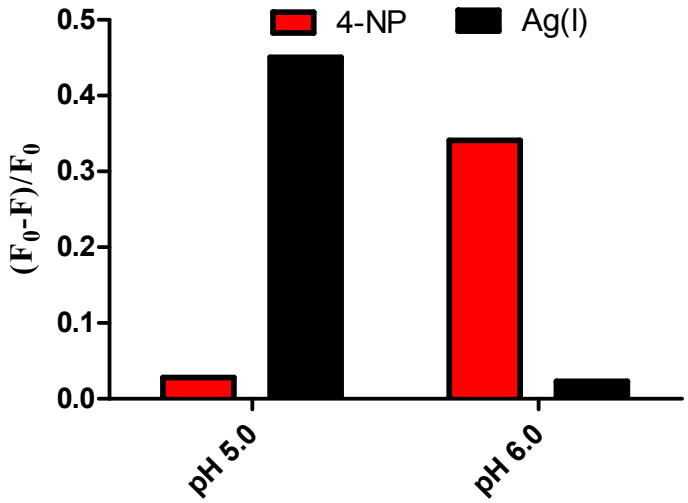


Fig. S5 Simultaneous detection of 4-NP and Ag(l) with the prepared *Aa* N,P-CDs at different pH value

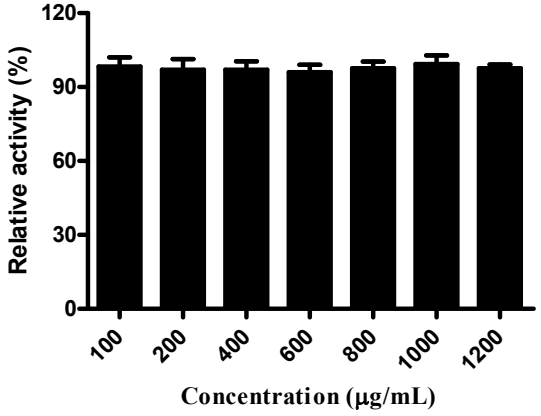


Fig. S6 U2OS cell viability from MTT assays with different *Aa* N,P-CDs concentration after 24 h incubation