

## Electronic supplementary information

### Smartphone-assisted colorimetric determination of uranyl ions in aqueous solutions

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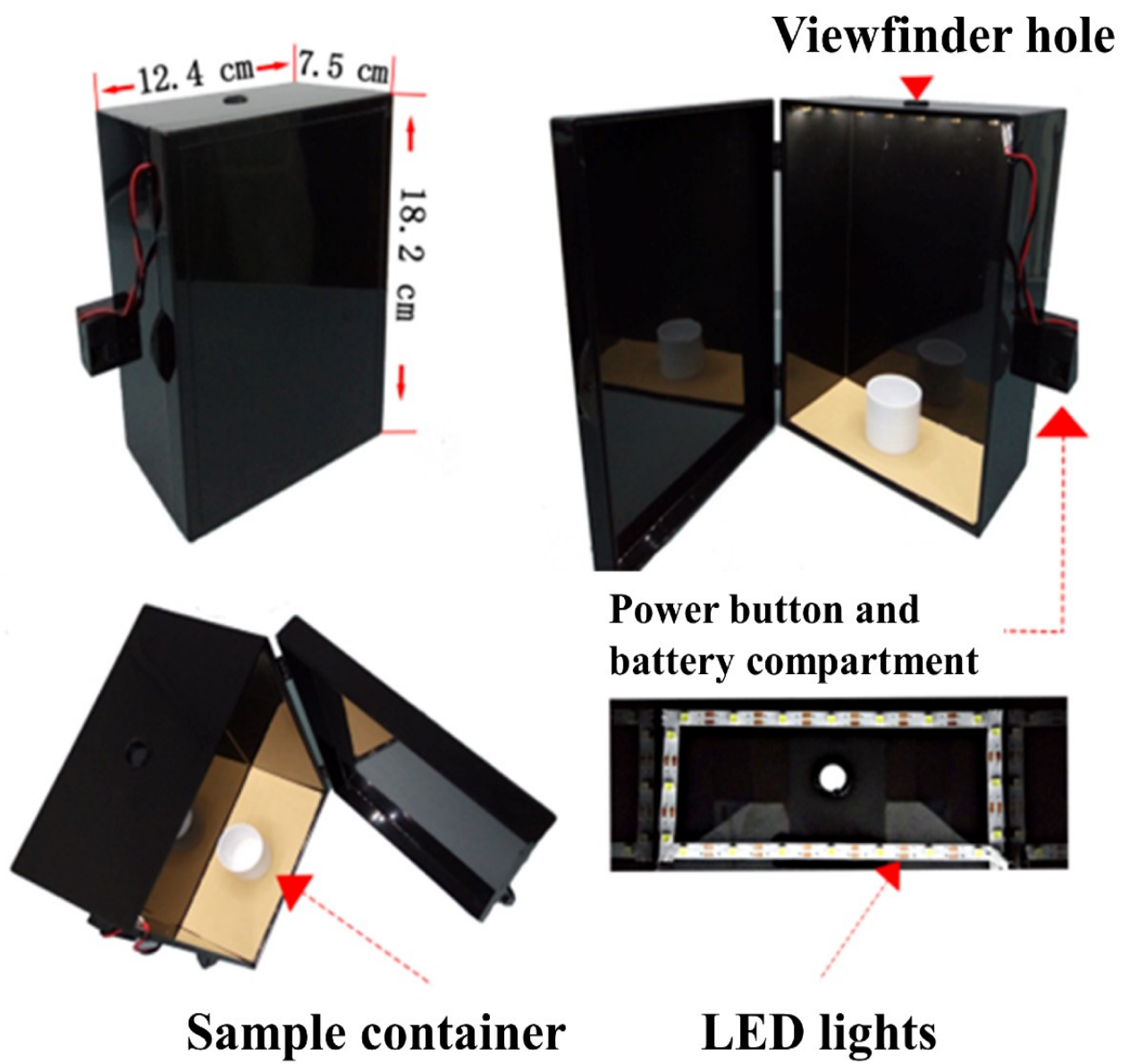
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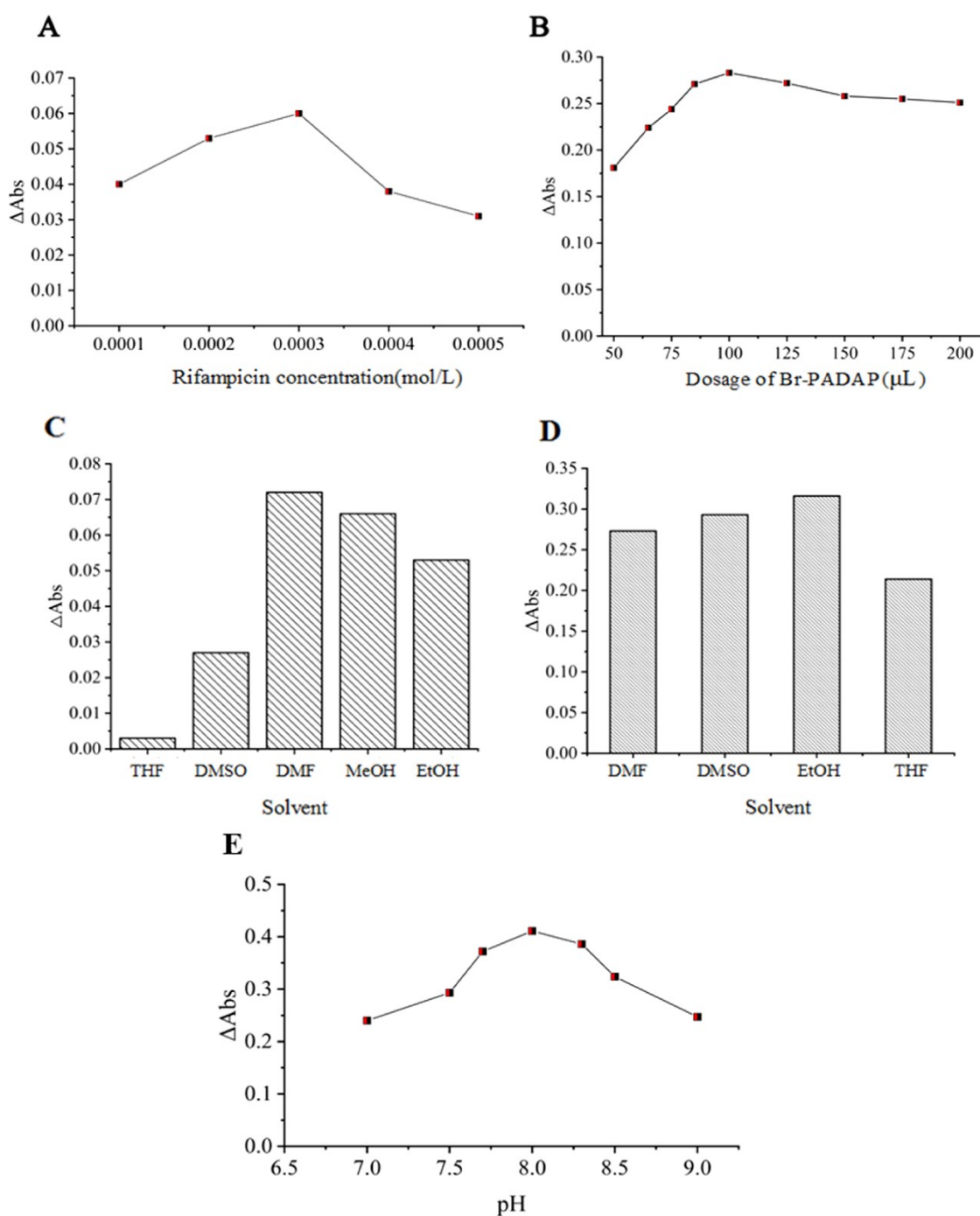
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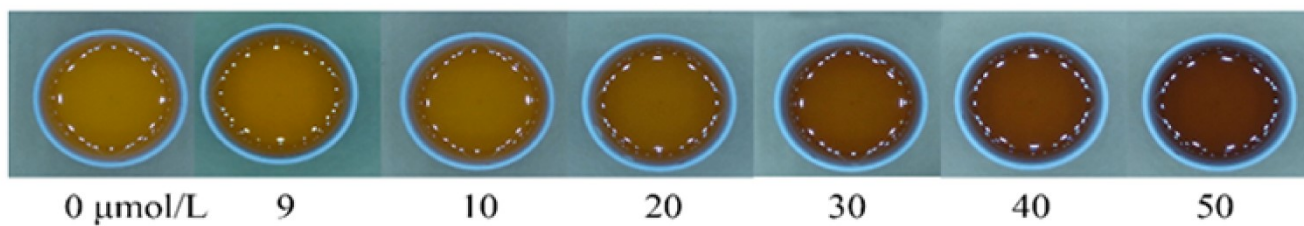


**Fig. S1** Structure of the colorimetric viewfinder.

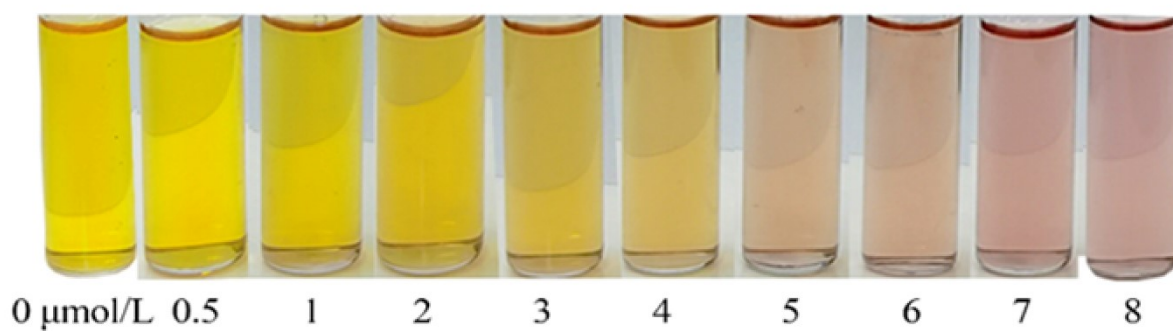


**Fig. S2** Absorbance difference values of the rifampicin system with different concentrations of Rifampicin fixed at 2 mL dosage (A). Absorbance difference values of Br-PADAP at a fixed concentration of 1mM with different dosages (B). Absorbance difference values of rifampicin system(C) and Br-PADAP system (D) in different solvents. Absorbance difference values of Br-PADAP system in different pH values(E).

**A**



**B**



**Fig. S3** Photographs of the detection solution of rifampicin system (A) and Br-PADAP (B) system mixed with different concentrations of  $\text{UO}_2^{2+}$ .

**Table S1** Comparison of methods for determination of  $\text{UO}_2^{2+}$ .

Detection platforms	Method	Linear range	Detection limit	Ref.
Triton X-100 micelles-capped curcumin	colorimetry	3.7–14 $\mu\text{M}$	3.7 $\mu\text{M}$	1
Nitrophenyldiacetic acids–AuNPs	colorimetry	0.5–3 $\mu\text{M}$	2 $\mu\text{M}$	2
VPA-AuNPs	colorimetry	0.5–10 $\mu\text{M}$ , 4–20 $\mu\text{M}$	1.07 $\mu\text{M}$	3
Dual-colour label-free carbon dots	fluorescence	0–30.0 $\mu\text{M}$	8.15 $\mu\text{M}$	4
Europium metal-organic framework	fluorescence	12.5–87.5 $\mu\text{M}$	2.5 $\mu\text{M}$	5
$\text{Fe}_3\text{S}_4$ nanoparticles wrapped in a g- $\text{C}_3\text{N}_4$ matrix	electrochemistry	0.05–8 $\mu\text{M}$	0.22 $\mu\text{M}$	6
Rifampicin system; Br–PADAP system	colorimetry	4–50 $\mu\text{M}$ ; 0.9–7 $\mu\text{M}$	3.17 $\mu\text{M}$ ; 0.89 $\mu\text{M}$	This work

## References

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