

**ELECTRONIC SUPPLEMENTARY MATERIAL**

**Modular 3D-printed fluorometer/photometer for determination of iron(II),  
caffeine, and ciprofloxacin in pharmaceutical samples**

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060

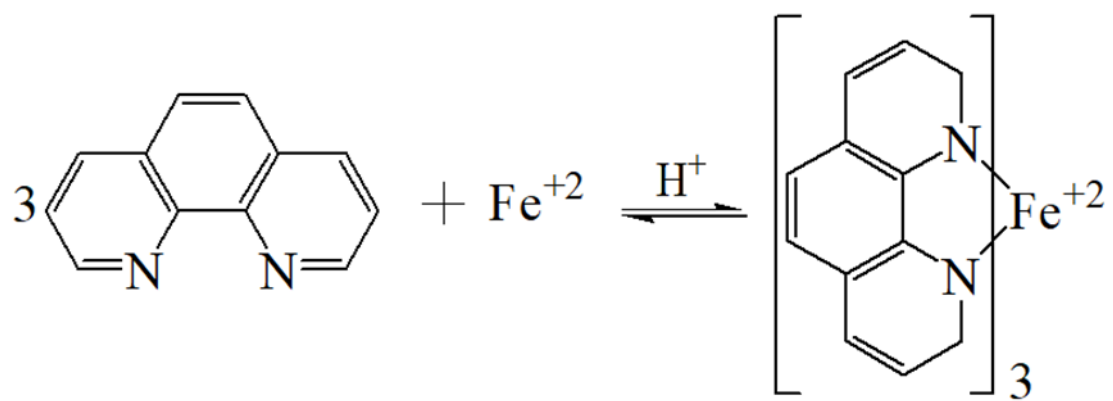


Figure S1 - The proposed reaction mechanism involving Fe(II) and 1,10-phenanthroline<sup>1</sup>.

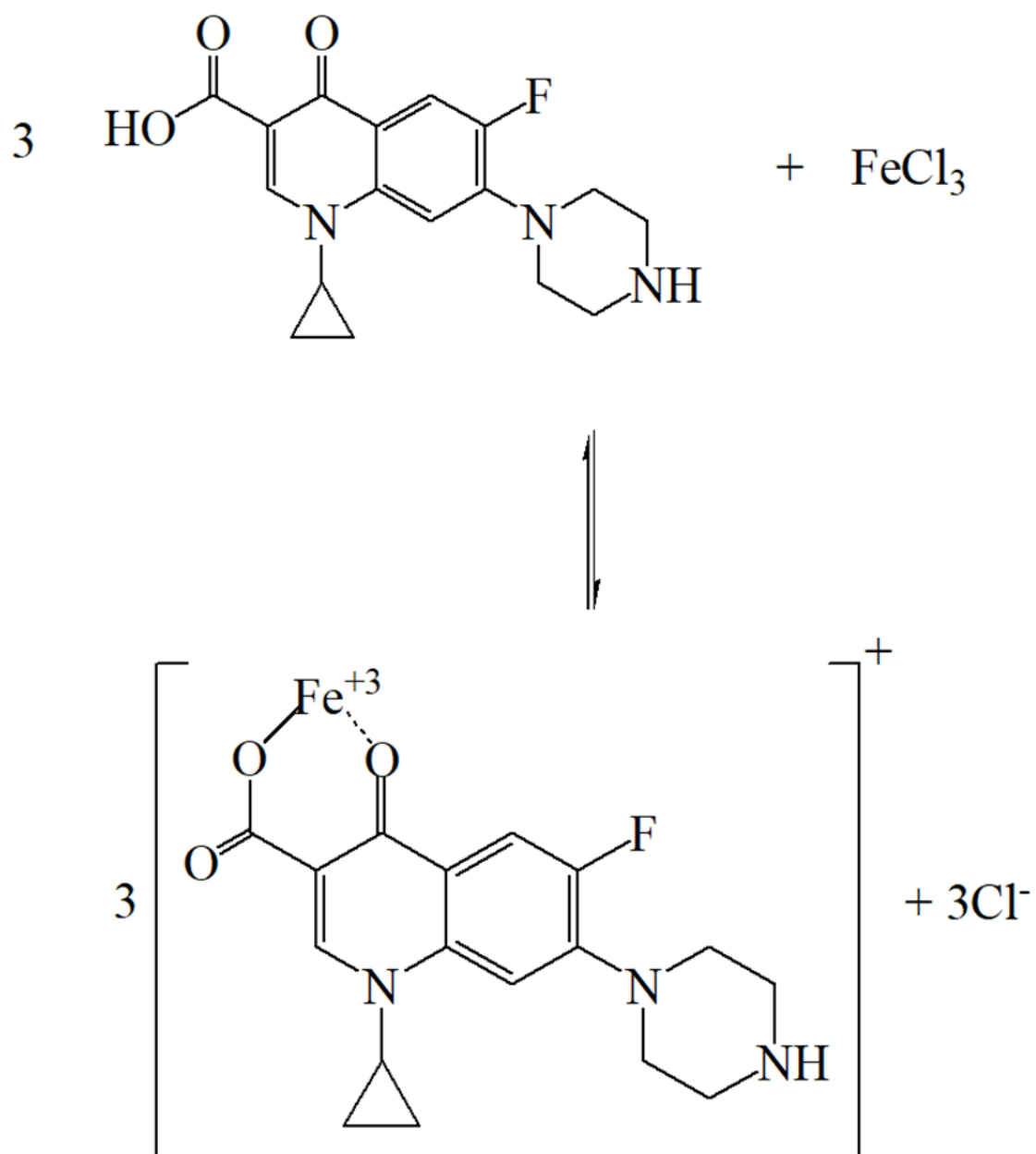


Figure S2 - The proposed reaction mechanism involving CIP and Fe(III) ions<sup>2</sup>.

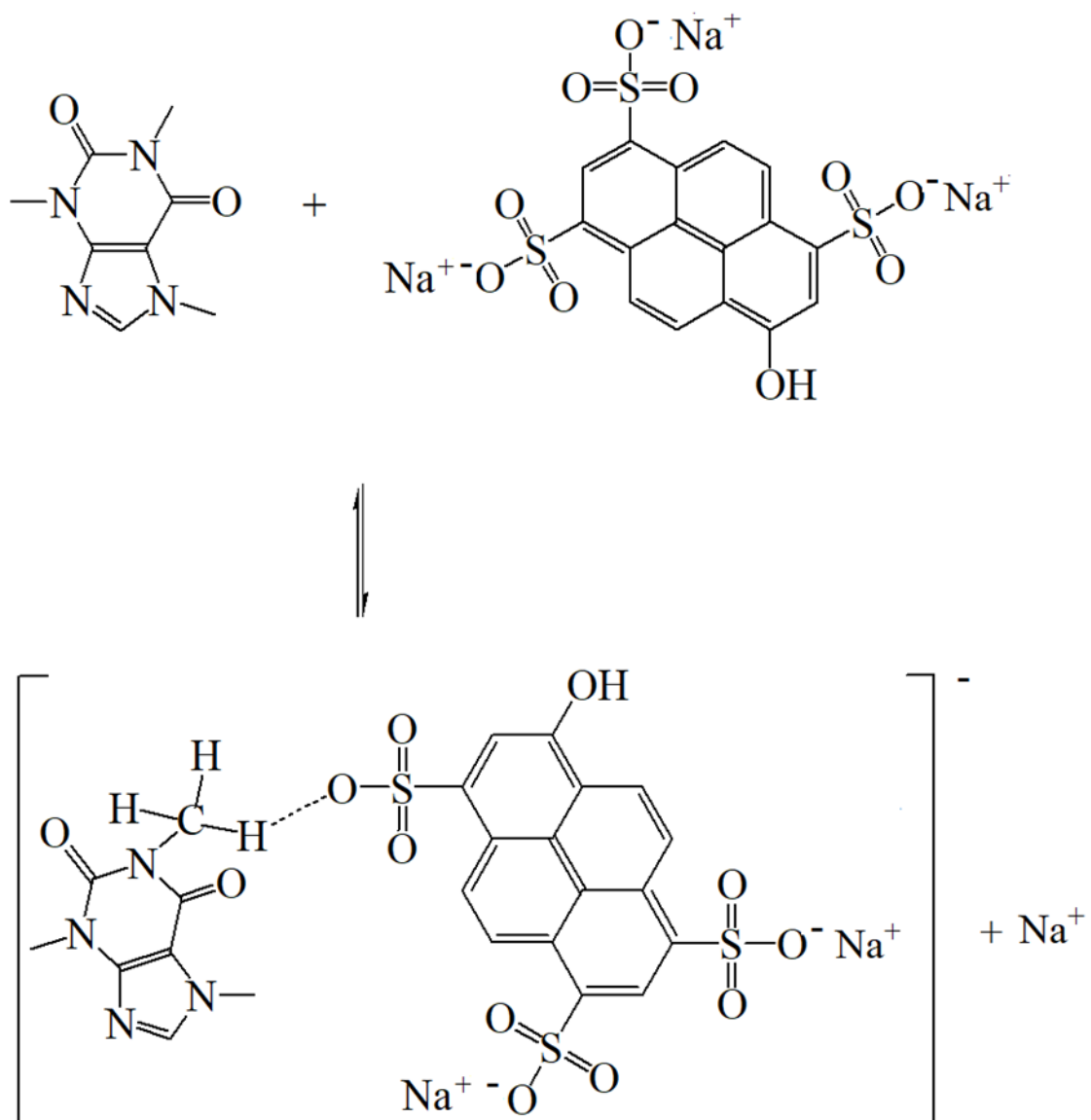


Figure S3 - The proposed reaction mechanism reaction involving caffeine and HPTS<sup>3-</sup>.

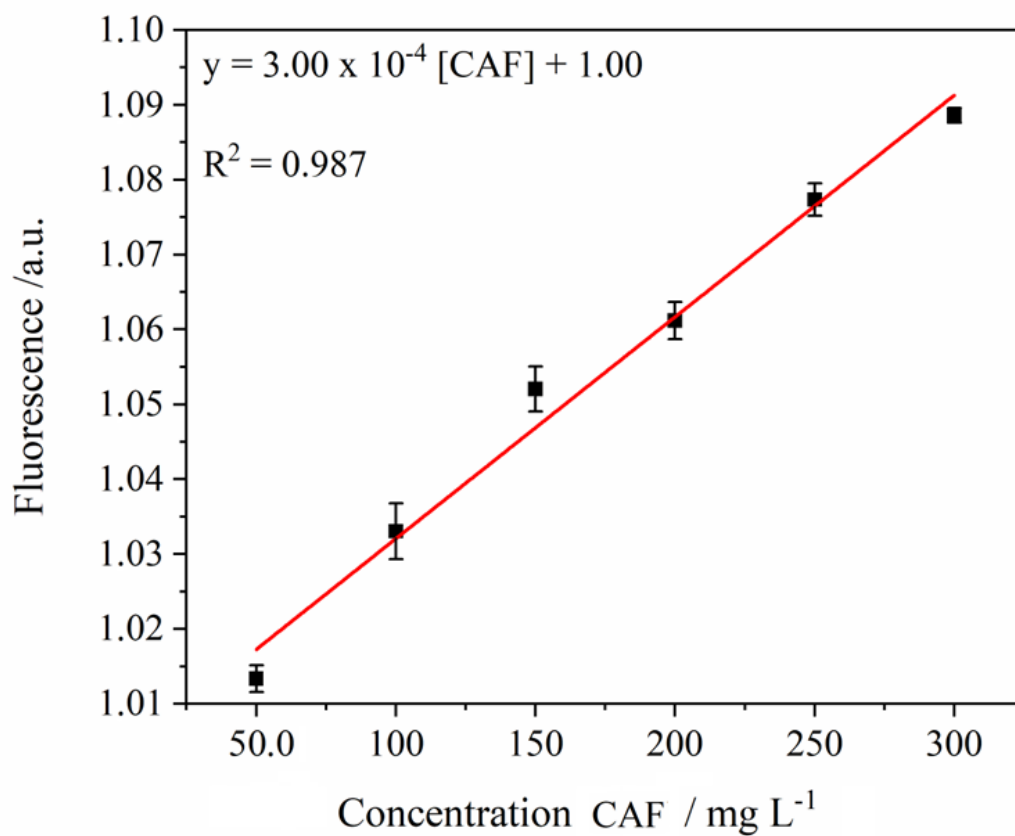


Figure S4 - CAF calibration curve obtained using the modular 3D-printed fluorometer.

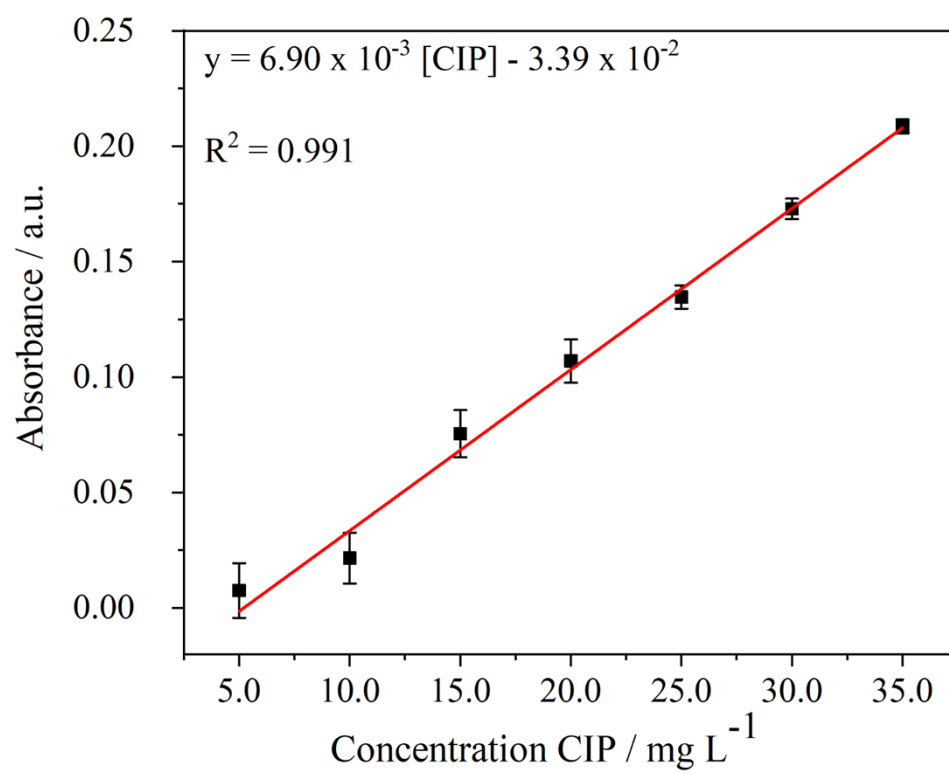


Figure S5 - CIP calibration curve obtained using the modular 3D-printed photometer.

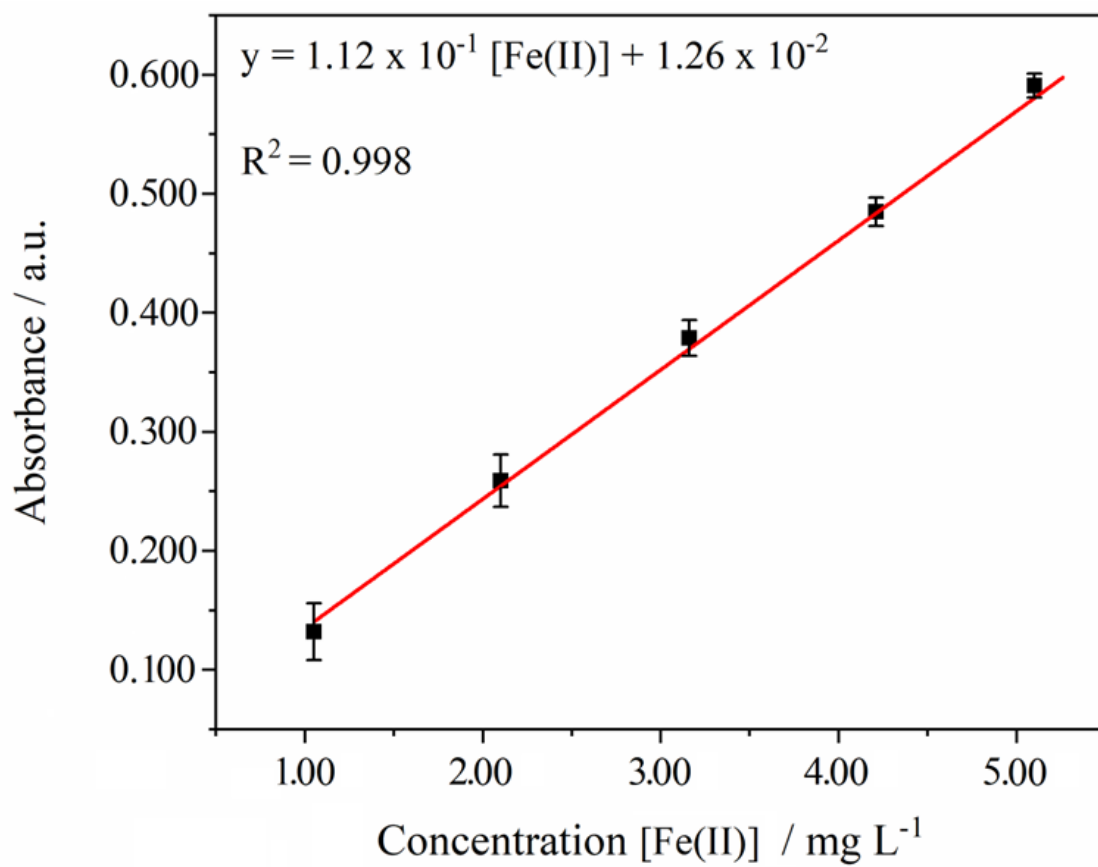


Figure S6 - Fe(II) calibration curve obtained using the modular 3D-printed photometer.

Table S1 - Recovery test performed in the CAF, CIP and Fe(II) tablets.

Analytes	Labeled concentration / mg L <sup>-1</sup>	Found concentration / mg L <sup>-1</sup>	Recovery	RSD / %	Spike / mg L <sup>-1</sup>	Found after spike / mg L <sup>-1</sup>	Recovery	RSD / %
CAF	210	211	100.5	5.50	40.0	248	99.2	3.30
CIP	15.0	15.1	100.7	1.80	10.0	24.6	98.4	1.30
Fe(II)	2.00	1.99	99.5	4.00	-	-	-	-

- not evaluated.

## References

<sup>1</sup> Sandell, E. B. *Colorimetric Determination of Traces of Metals*, 3<sup>rd</sup> ed.; Interscience, Ed.; New York 1959.

<sup>2</sup> Sultan, S.M.; Suliman, F.E.O. Flow injection spectrophotometric determination of the antibiotic ciprofloxacin in drug formulations. *Analyst* 1992, 117 (9), 1523–1526, <https://doi.org/10.1039/an9921701523>.

<sup>3</sup> Rochat, S.; Steinmann, S. N.; Corminboeuf, C. and, Severin, K. Fluorescence Sensing of Caffeine in Water with Polysulfonated Pyrenes. *Chem. Commun. J.* **2011**, 47 (5), 10584–10586. <https://doi.org/10.1039/c1cc13927d>.