Supporting Information

Highly Selective Two-photon Fluorescence Probe for Determination of Mercury Ions

Fang Liu,[†] Changqin Ding,[†] Ming Jin,[*,ζ] Yang Tian[*,†‡]

[†]Department of Chemistry, Tongji University, Siping Road 1239, Shanghai 200092, [‡]Department of Chemistry, East China Normal University, North Zhongshan Road 3663, Shanghai 200062, [ζ]School of Materials Science and Engineering, Tongji University, Caoan Road 4800, Shanghai 201804, P. R. China

E-mail: ytian@chem.ecnu.edu.cn; Fax: +86 21 62237105; Tel: +86 21 62237105

1. ^{1}H NMR spectrum (400 MHz) of PT in $CDCl_3$

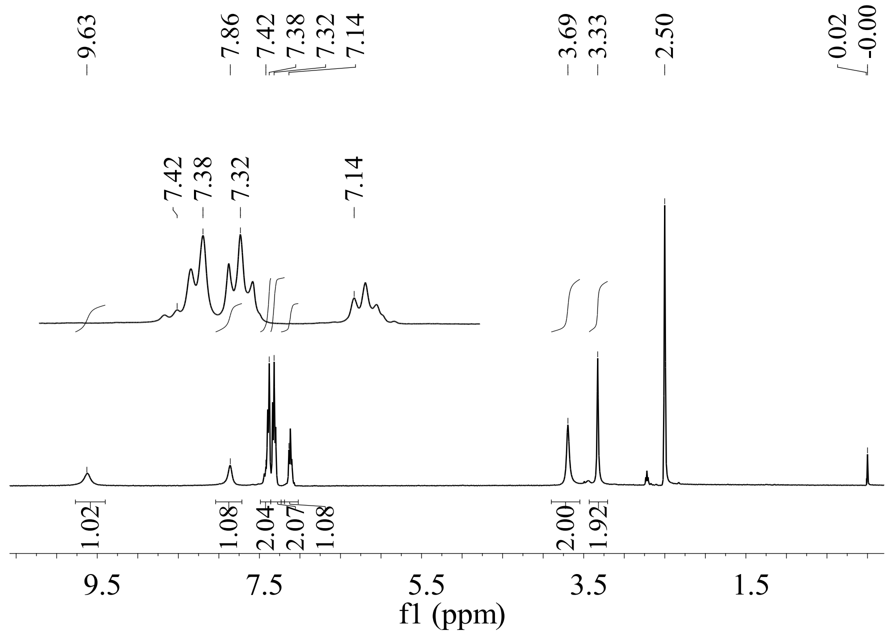


Fig. S1. ^{1}H NMR spectrum (400 MHz) of PT in $CDCl_3$.

2. ^{13}C NMR spectrum (400 MHz) of PT in $CDCl_3$

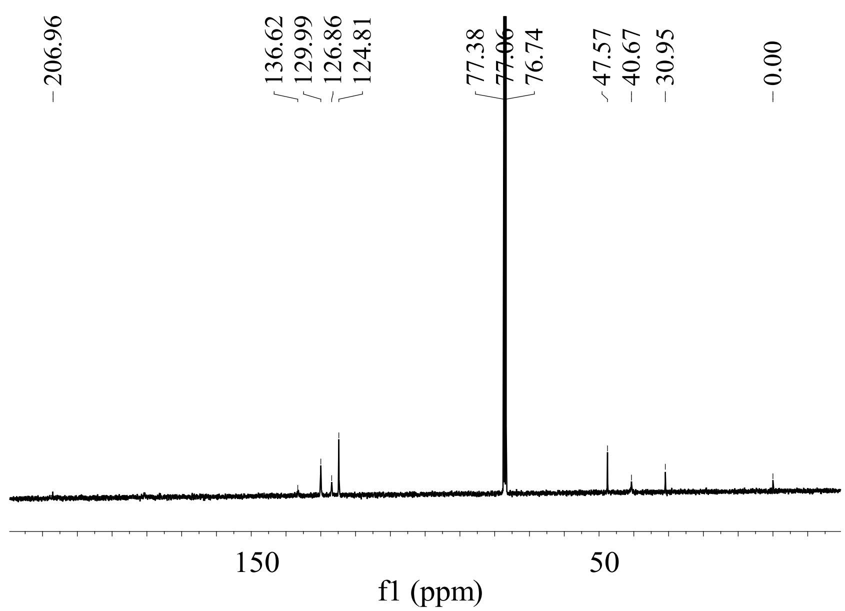


Fig. S2. ^{13}C NMR spectrum (400 MHz) of PT in $CDCl_3$.

3. TOF MS spectrum (400 MHz) of PT in $CDCl_3$

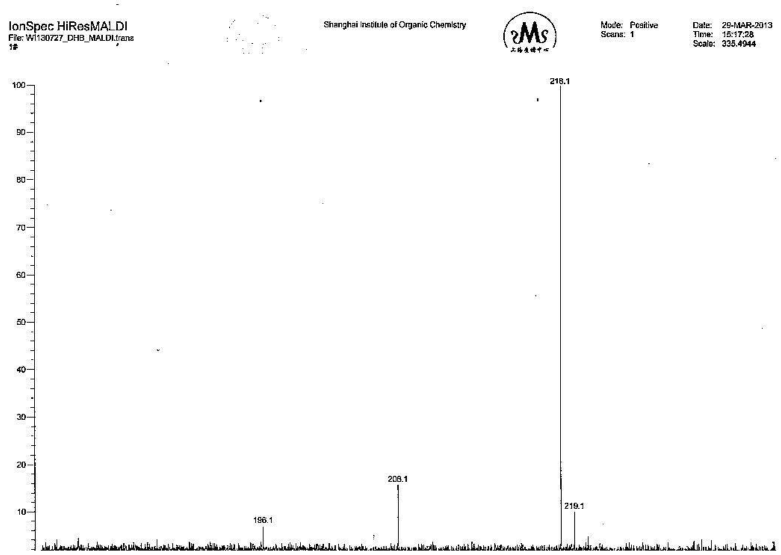


Fig. S3. TOF MS spectrum (400 MHz) of PT in $CDCl_3$.

4.[1]H NMR spectrum of ATD

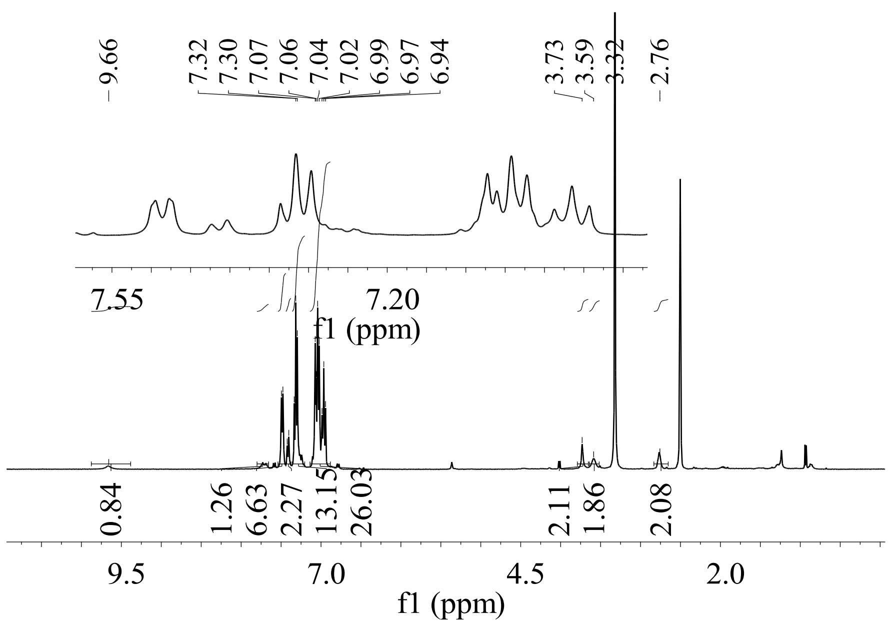


Fig. S4. ^{1}H NM spectrum (400 MHz) of ATD in d_6-DMSO.

5. ^{13}C NMR spectrum of ATD

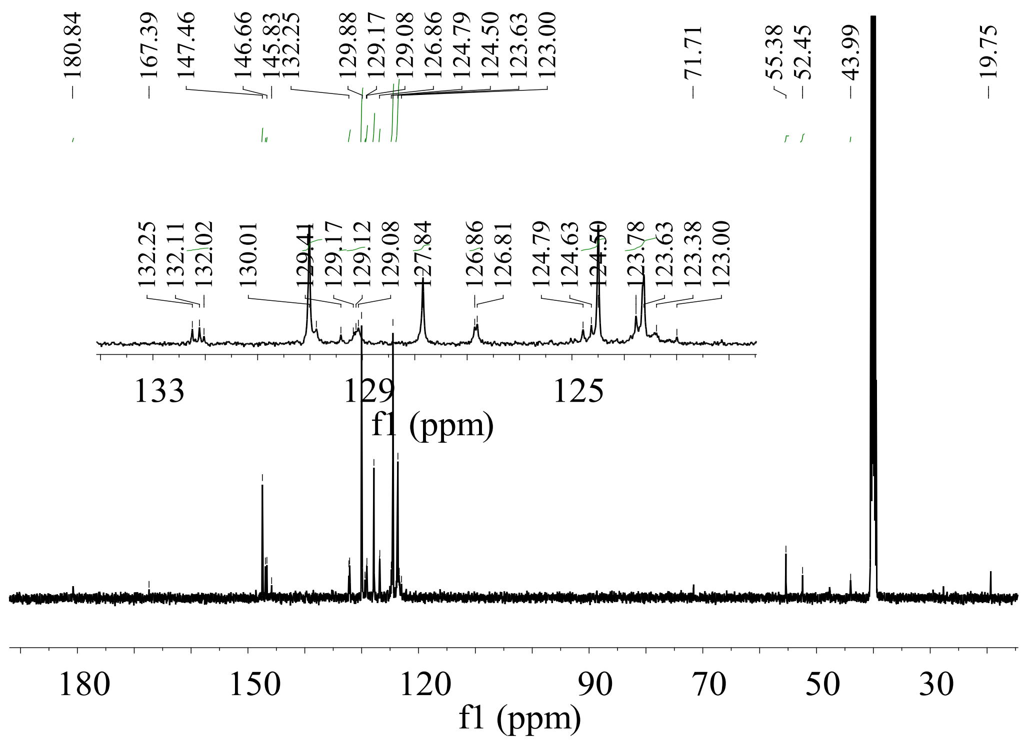


Fig. S5. ^{13}C NMR spectrum (400 MHz) of ATD in d_6-DMSO.

6. TOF MS spectrum (400 MHz) of ATD in DMSO

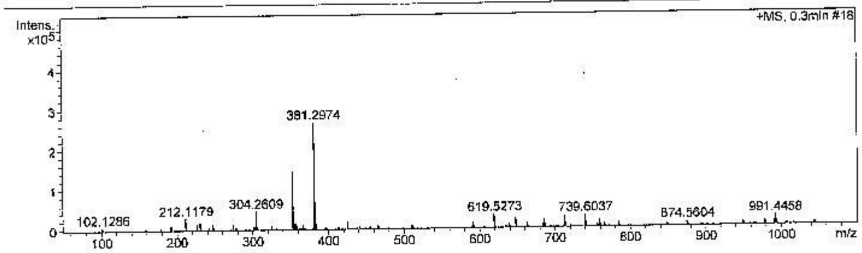
Mass Spectrum SmartFormula Report

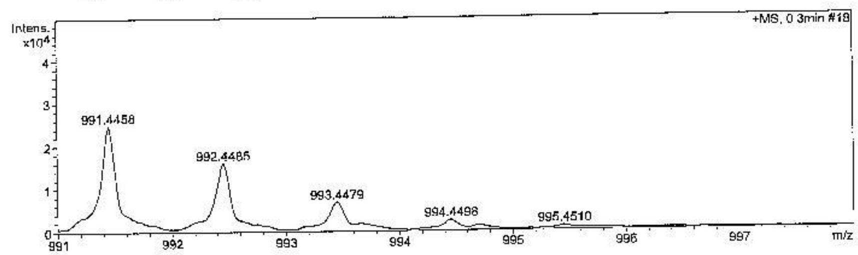
Analysis Info

Analysis Name	D:\Data\tianyang\20131225\LF-2.d	Operator	bruker
Method	tune_low2.m	Instrument / Ser#	micrOTOF 10399
Sample Name	LF-2		
Comment			

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	0.3 Bar
Focus	Not active			Set Dry Heater	180 °C
Scan Begin	50 m/z	Set Capillary	4500 V	Set Dry Gas	4.0 l/min
Scan End	3000 m/z	Set End Plate Offset	-500 V	Set Divert Valve	Waste





#	m/z	I	FWHM
1	193.1013	12533	0.0338
2	212.1179	30395	0.0356
3	226.9512	15946	0.0379
4	231.0777	18821	0.0382
5	247.0725	15289	0.0404
6	274.2734	14832	0.0443
7	304.2609	47072	0.0484
8	353.2661	145739	0.0560
9	354.2692	29411	0.0566
10	356.0423	17909	0.0563
11	358.0397	12178	0.0534
12	367.0577	12353	0.0582
13	380.0886	19739	0.0584
14	381.2974	266762	0.0590

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Fig. S6. TOF MS spectrum (400 MHz) of ATD in d_6-DMSO.

7. The quadratic relationship of the observed two-photon fluorescence intensity of ATD under excitation at 800 nm

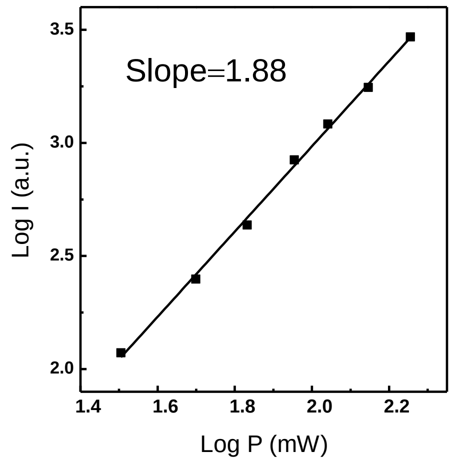

Fig. S7. The close to quadratic relationship of the observed two-photon fluorescence intensity of ATD under excitation at 800 nm.

8. Quantum yield of ATD.

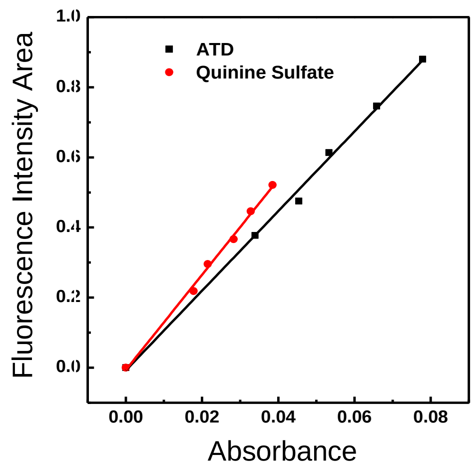

Fig. S8. Photoluminescence (excited at 400 nm) and absorbance (at 400 nm) of ATD probe and quinine sulfate.

9. Optimized reaction time

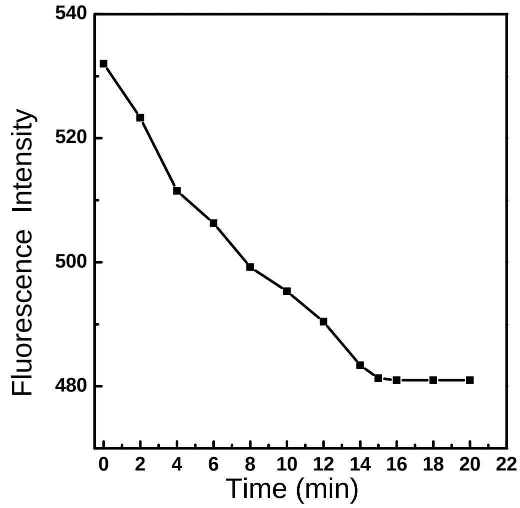

Fig. S9. The relationship between fluorescence intensity of ATD (5 μM) and the reaction time with Hg^{2+}. The optimum concentration of Hg^{2+} was selected 100 nM.