Electronic Supplementary Information for

Ultrasound accelerated organogel: application for visual discrimination of Hg²⁺ from Ag⁺

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1. Synthesis of TN



Scheme. S1 the synthesis procedure of TN.

Synthesis of 1-4

The synthesis of 1-4 could be seen from our previous report in the literature 27. The synthesis of **TN**

Compound 4, phenyl isothiocyanate (135.18 mg, 1mmol) were refluxed in ethanol for 24 hours, then solid was obtained by hot filtration, and purified by co chromatography using CH₂Cl₂ and MeOH (5:1) as eluent, resulting in yellow solid (383 mg, yield: 40%) M.p. 178-180 °C. ¹HNMR (500 M, DMSO- d_6 , δ): 0.59(s, 3H), 0.84 (d, 3H, J=2 Hz), 0.85 (d, 3H, J=2 Hz), 0.87-2.27 (m, 47 H), 2.97-3.08 (m, 4H), 3.59-3.63 (m, 2H), 4.27-4.33 (m, 1H), 6.96-9.98 (m, 2H), 7.12-7.15 (t, 1H, J=7.5 Hz), 7.29-7.34 (m, 3H), 7.68-7.72 (t, 1H, J=7.5 Hz), 8.25-8.27 (d, 1H, J=8.5 Hz), 8.43-8.45 (d, 1H, J=7 Hz), 8.68-8.70 (d, 1H, J=8 Hz). HRMS calc. for [C₅₇H₇₈N₆O₅S+H]⁺: 959.5833; Found: 959.5749.



2. Other experiment data

Fig. S1 The linear fitting curves of fluorescence change of **TN** (10^{-5} M) with the addition of [Hg²⁺] (a) and [Ag⁺] (b).



Fig. S2 MALDITOF mass spectral experiment experiments of TN samples after

addition of Hg^{2+} and Ag^+ .



Fig. S3 the photos of **TN** organogels in different organic solvents in light and in dark (irradiated by 365 nm). From left to right: gels in acetone, propanol, butanol, benzene, and isopropanol.



Fig. S4 FT-IR spectra of precipitate and S-gel of TN.



Fig. S5 XRD data of TN S-gel in butanol.



Fig. S6 **TN** S-gel and S-gels in butanol upon the addition of other ions (5 eq.) in light and in dark. From left to right: **TN** gel, gel with CuCl₂, gel with ZnCl₂, gel with PbCl₂, gel with CdCl₂.

Table S1 the complete fluorescence quenching time of **TN** S-gel in butanol upon the addition of different amount of Hg^{2+} .

Amount of Hg ²⁺	0.5 eq.	1 eq.	2 eq.	3 eq.	5 eq.
Quenching time	2 d	1 d	16 h	7.5 h	4 h

Table S2 the gel collapsing time of **TN** S-gel in butanol upon the addition of different amounts of Ag⁺.

Amount of Ag ⁺	0.5 eq.	1 eq.	2 eq.	3 eq.	5 eq.
Collapsing time	3 d	2 d	24 h	17 h	8 h



Fig. S7 photos of **TN** gel in benzene, and gels upon the addition of Ag^+ and Hg^{2+} in light and in dark (irradiated by 365 nm).