

Supporting Information for

**Highly Selective and Sensitive Chromogenic Recognition of Sarin Gas Mimicking
Diethylchlorophosphate**

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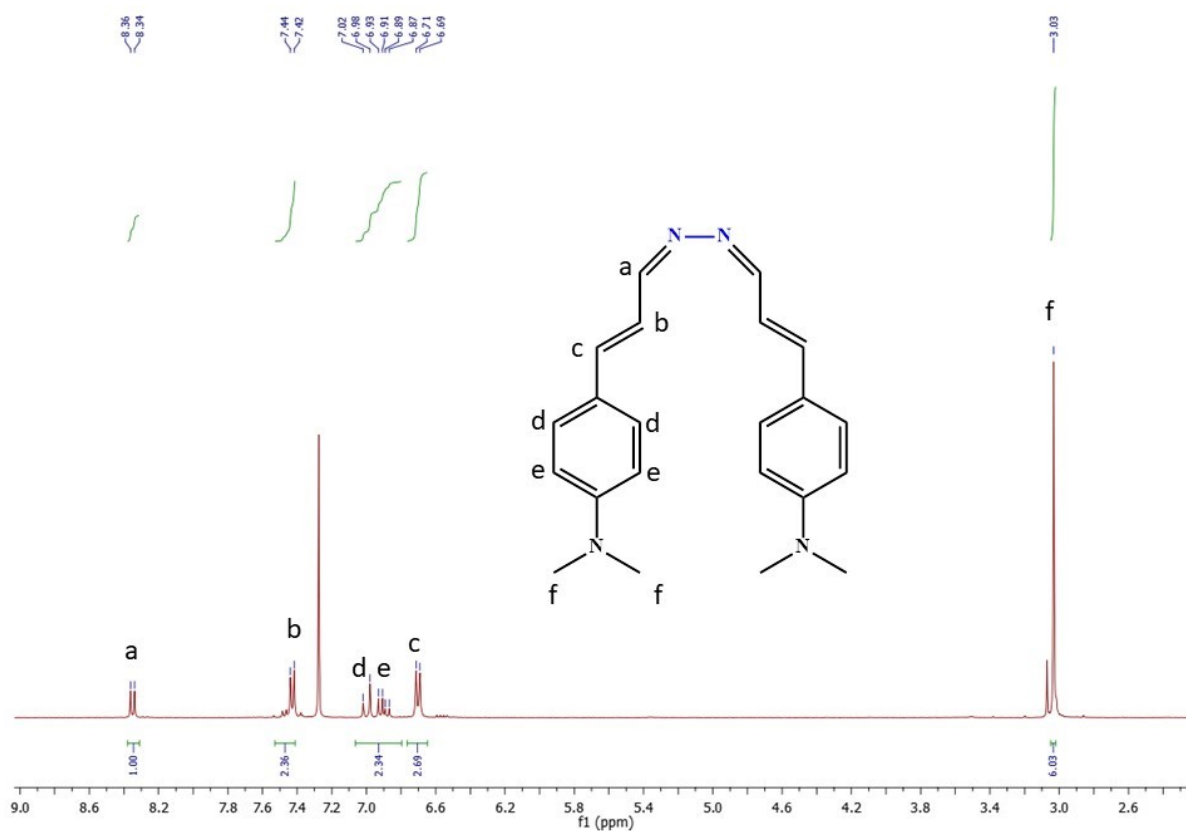


Fig. S1 ^1H NMR of our synthesized chemosensor **HBD**

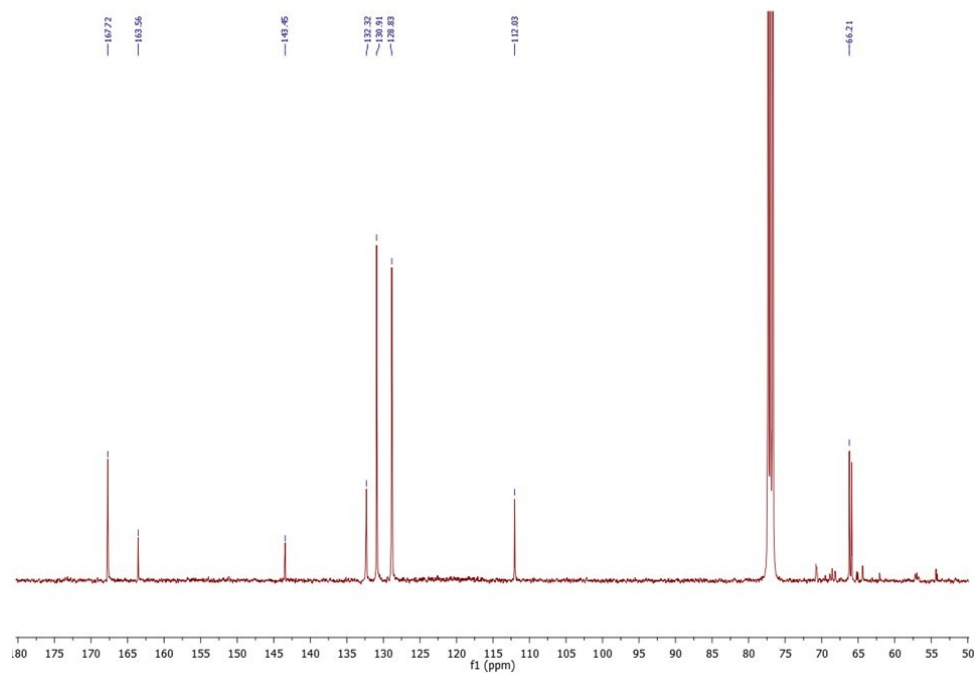


Fig. S2 ^{13}C NMR of our synthesized chemosensor **HBD**

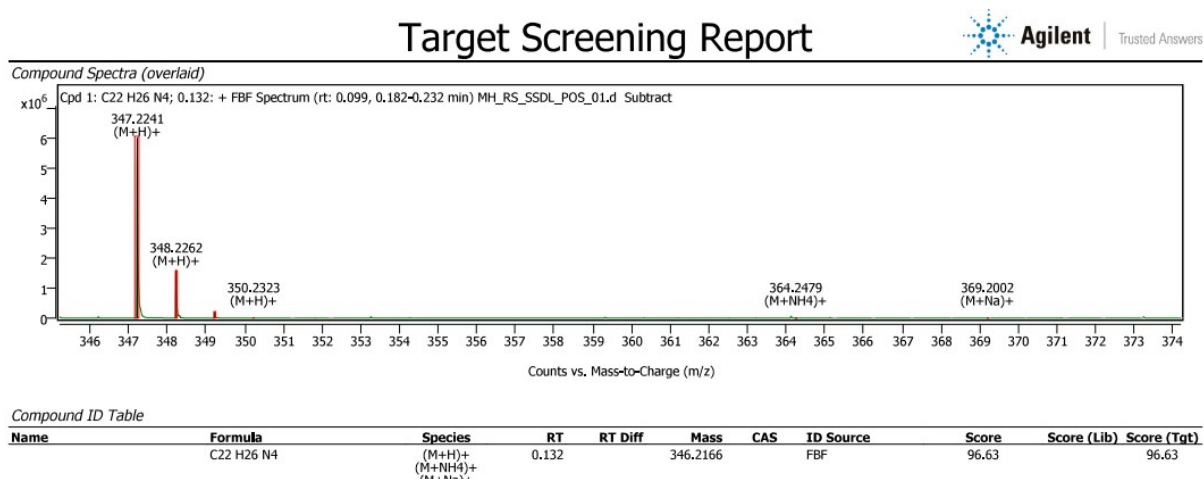


Fig. S3 HRMS spectra of our developed **HBD**

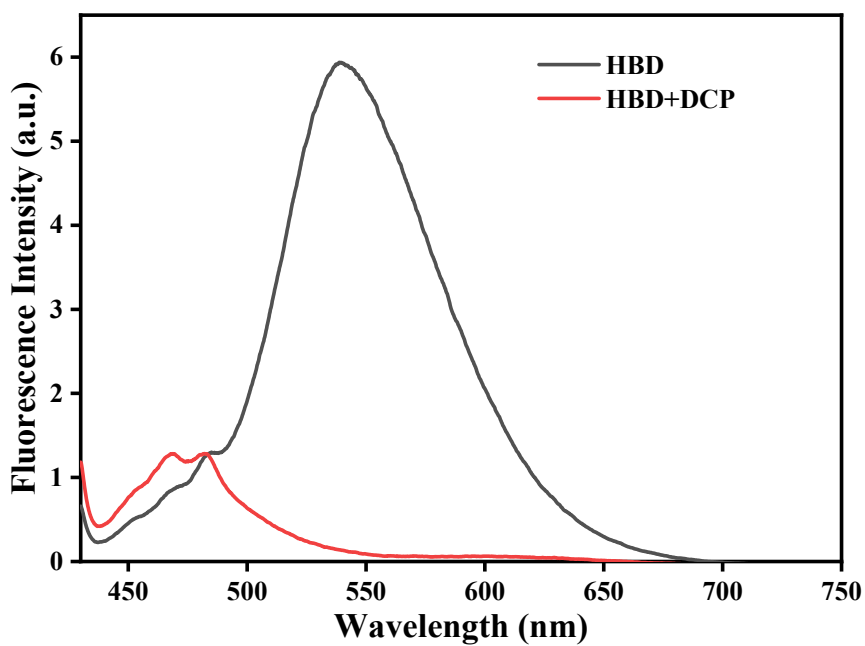


Fig. S4 Fluorometric investigation of our probe **HBD** absence and presence of DCP.

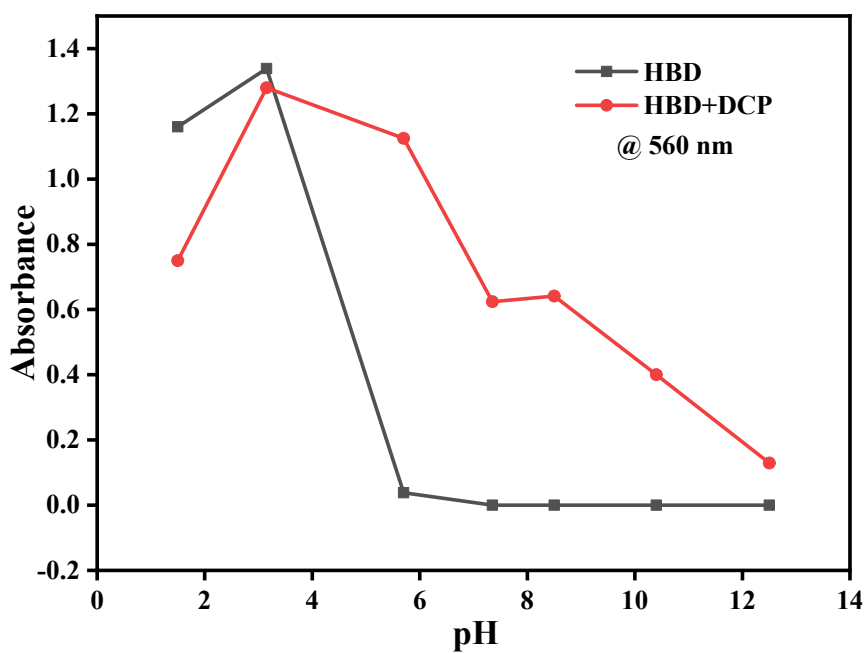


Fig. S5 Change in absorbance at 560 nm of **HBD** (black dots) and **HBD** in the presence of DCP at different pH (red dots)

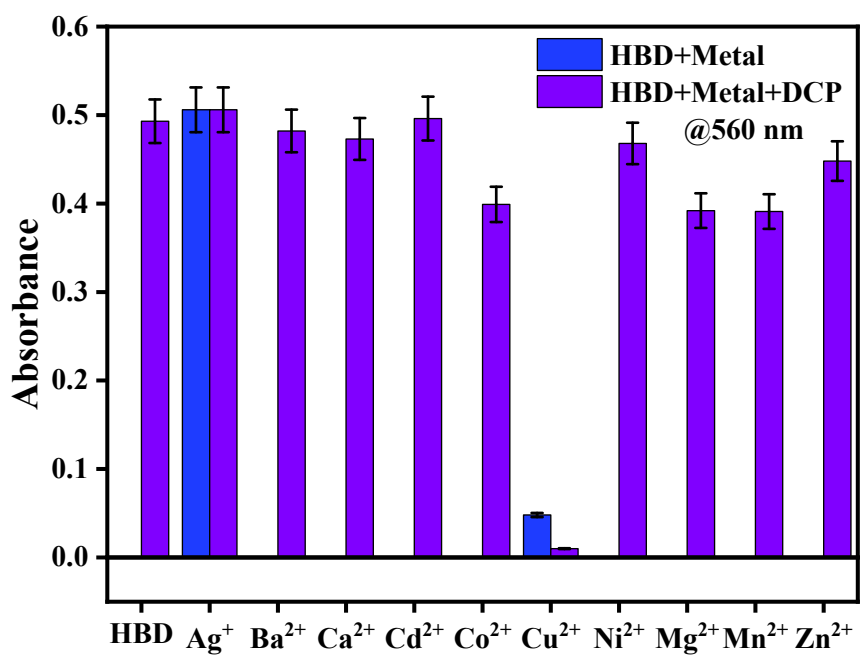


Fig. S6 Spectrophotometric interference investigation of our probe **HBD** with the various metal ions.

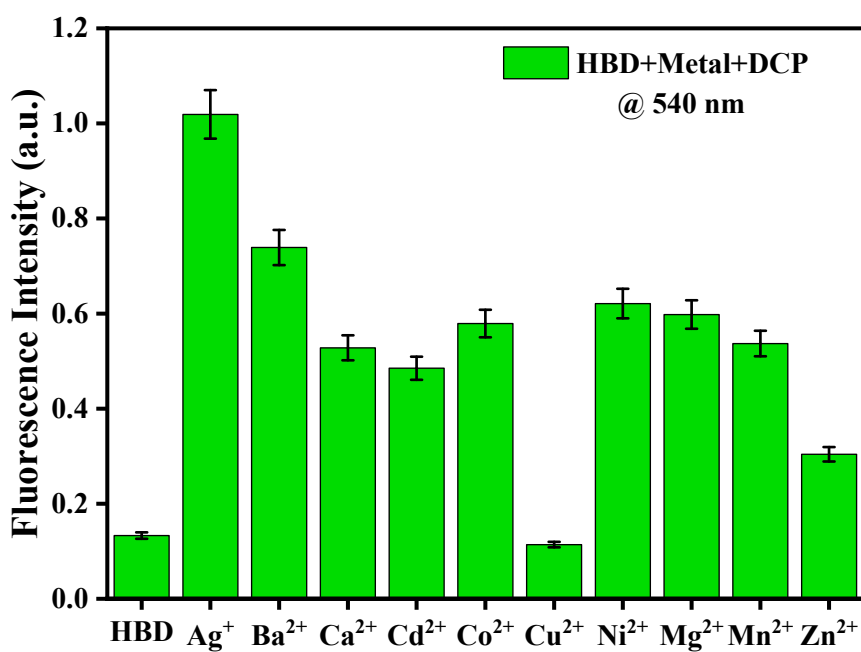


Fig. S7 Spectrofluorometric interference investigation of our probe **HBD** with the various metal ions.

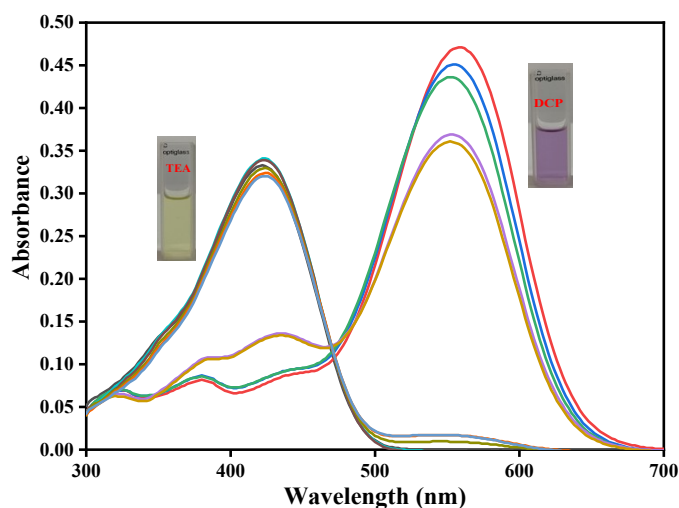


Fig. S8 Absorbance spectra of **HBD** upon sequential addition of DCP and TEA.

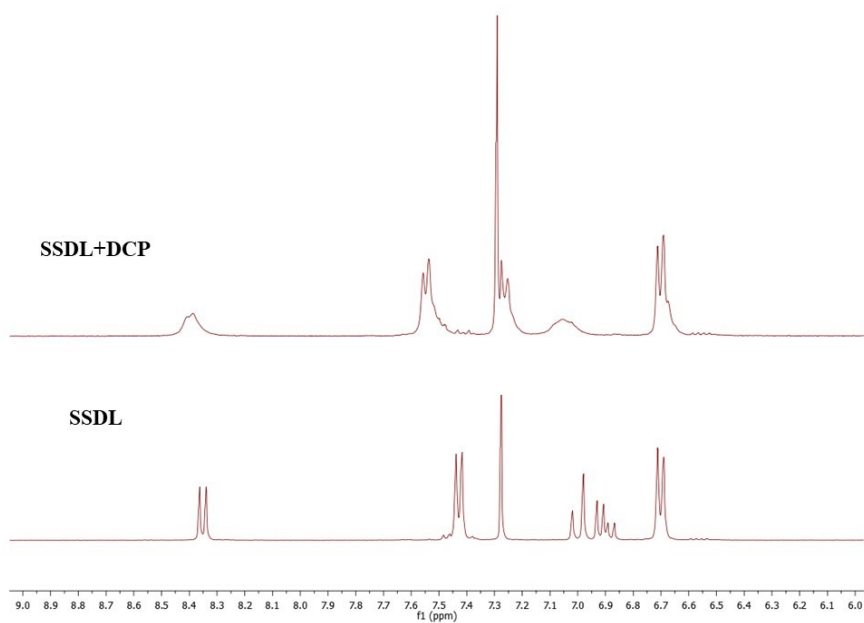


Fig. S9 ^1H NMR titration spectra of **HBD** in the absence and presence of DCP.

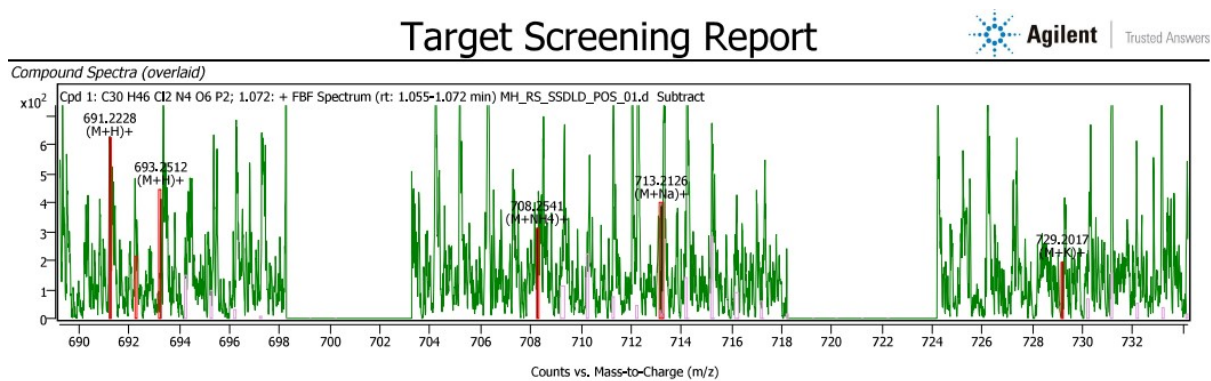


Fig. S10 HRMS spectra of phosphorylated product **HBD-DCP**.

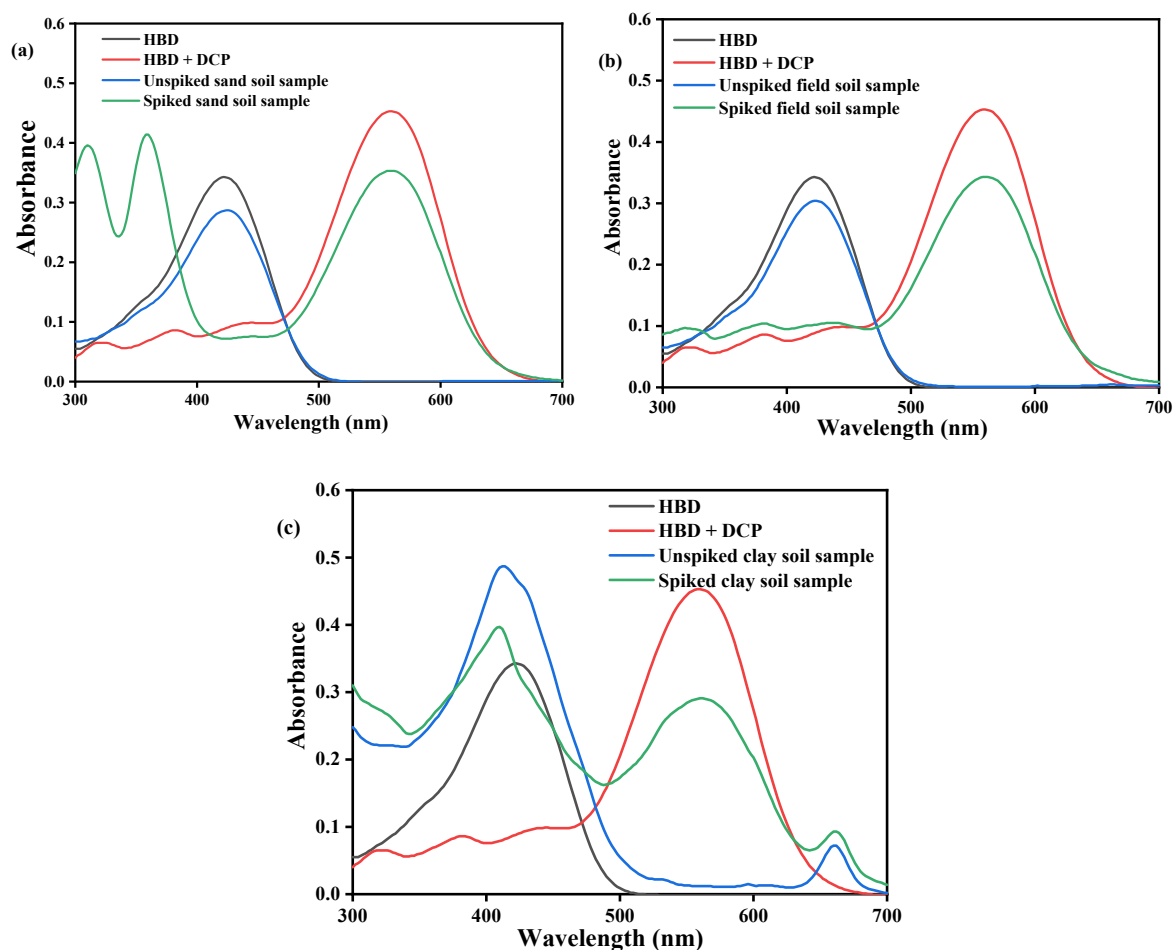


Fig. S11 Absorbance spectra of **HBD** solution in different spiked and unspiked soil samples such as (a) sand, (b) field, and (c) clay soil, respectively.

Table S1. Comparison table of various chemosensors that have been introduced for the detection of DCP in the last few decades with our **HBD**.

Sensors	Type of response	Response Time	Test kit	Detection limit	Detection in gaseous phase	Ref.
squaraine-ethanolamine adducts	Colorimetric	Not available	Not available	3.5 μ M	Not available	1
Terpyridine based	Colorimetric fluorometric	Few seconds	vapor test Paper test	0.35 μ M and 0.30 μ M	Yes	2
thiourea-based rhodamine	Colorimetric fluorometric	Not available	No	2 μ M	No	3

DASA-Derived Polymeric Probe	Colorimetric (On-off)	Within 2 minutes	vapor test	1mM	Yes	4
bis-indolyl based chromogenic probe	Colorimetric	Few minutes	vapor test Paper test	10.8 μ M	Yes	5
Bifunctional azoaniline based	colourimetric	Within 1 min	Not mentioned	0.2 mM	Not mentioned	6
Polymer (BPAm-co-DMA-co-MPDEA)	colorimetric	Within few mins	polymeric film	18.4 μ M	Yes	7
di-methyltin derivative	Fluorometric (turn-off)	Almost 2 minutes	Yes (Spot Testing Device)	0.023 and 0.092 mM	Yes	8
pyrene based turn-on fluorescent polymeric probe	ON/OFF reversible fluorescence	Few minutes	Quartz Plate vapor test	0.1 mM	Yes	9
benzothiazole-based	Fluorometric	Not available	Not available	0.43 μ M	Not available	10
Xanthene	Colorimetric, fluorometric (turnon)	Not mentioned	Not mentioned	1.36 μ M and 26 μ M	NA	11
Hydrazine based	Colorimetric	Few seconds	Paper test, vapor test	0.30 μM	Yes	Our Work

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