Selective sensing of Hg\(^{2+}\) ions by optical and colorimetric methods using gold nanorods embedded in functionalized silicate sol–gel matrix

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SUPPLEMENTARY INFORMATION

Fig. S1 Absorption spectra of Au–TPDT NRs (a) and Au–TPDT NRs after the addition of 5 µL of water (b).
Fig. S2 Absorption spectral changes of LSPR band upon each addition of 50 µM of other environmentally relevant metal ions one by one (Cd$^{2+}$, Pb$^{2+}$, Mg$^{2+}$, Ca$^{2+}$, Zn$^{2+}$, Mn$^{2+}$, Co$^{2+}$, Fe$^{2+}$, Fe$^{3+}$, Cu$^{2+}$ and Ni$^{2+}$) (a) in the same Au–TPDT NRs solution as a mixed solution and finally upon the addition of 30 µM Hg$^{2+}$ ions (b) to the same Au–TPDT NRs solution.
**Fig. S3** TEM image of Au–TPDT NRs after the addition of 8 μM Hg²⁺ ions.

**Fig. S4** EDS analysis of Au–TPDT NRs after the addition of 20 μM Hg²⁺ ions.
Fig. S5 XPS analysis of Au–TPDT NRs for (A) Au 4f and (B) Hg 4d regions.
Fig. S6 Absorption spectra of Au NRs (a) and Au NRs after the addition of 20 μM Hg$^{2+}$ ions (b).