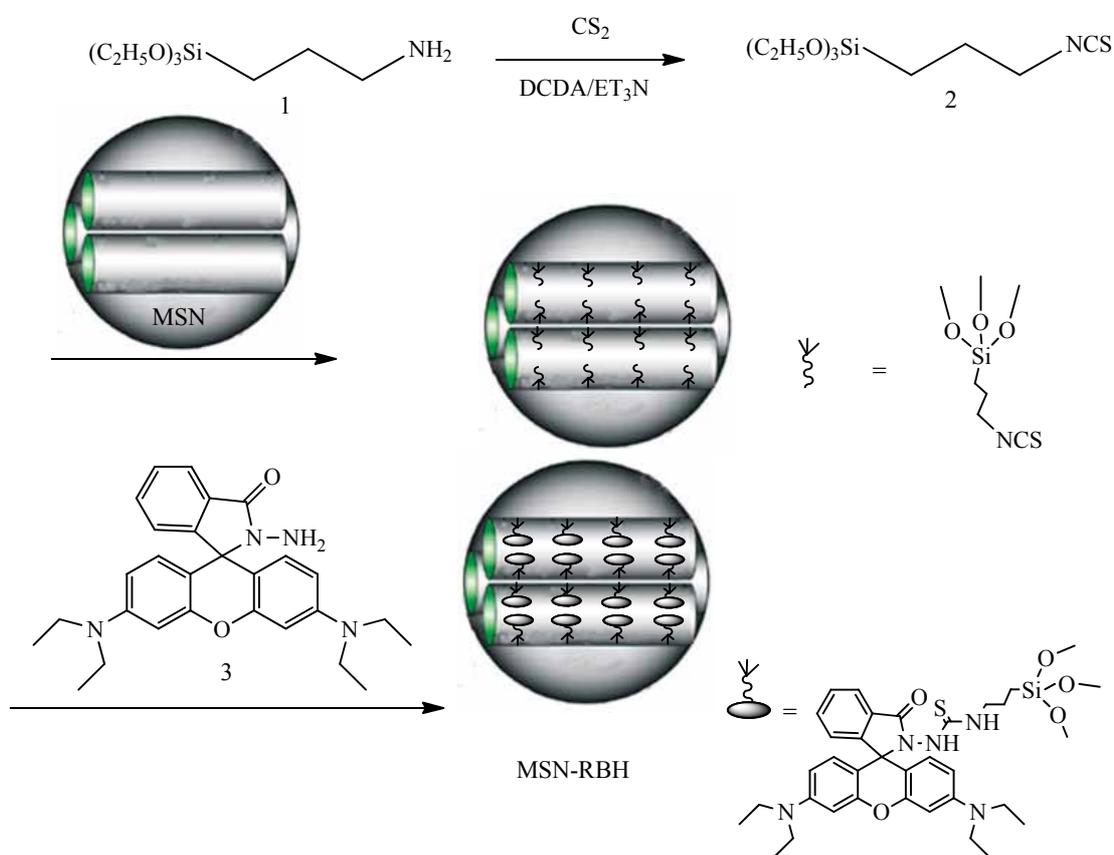


Supporting Information:

Fluorescence Turn-on Chemodosimeter-Functionalized Mesoporous Silica Nanoparticles and Their Application in Cell Imaging

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Scheme S1. Synthetic route of chemodosimeter-functionalized mesoporous silica nanoparticles MSN-RBH.

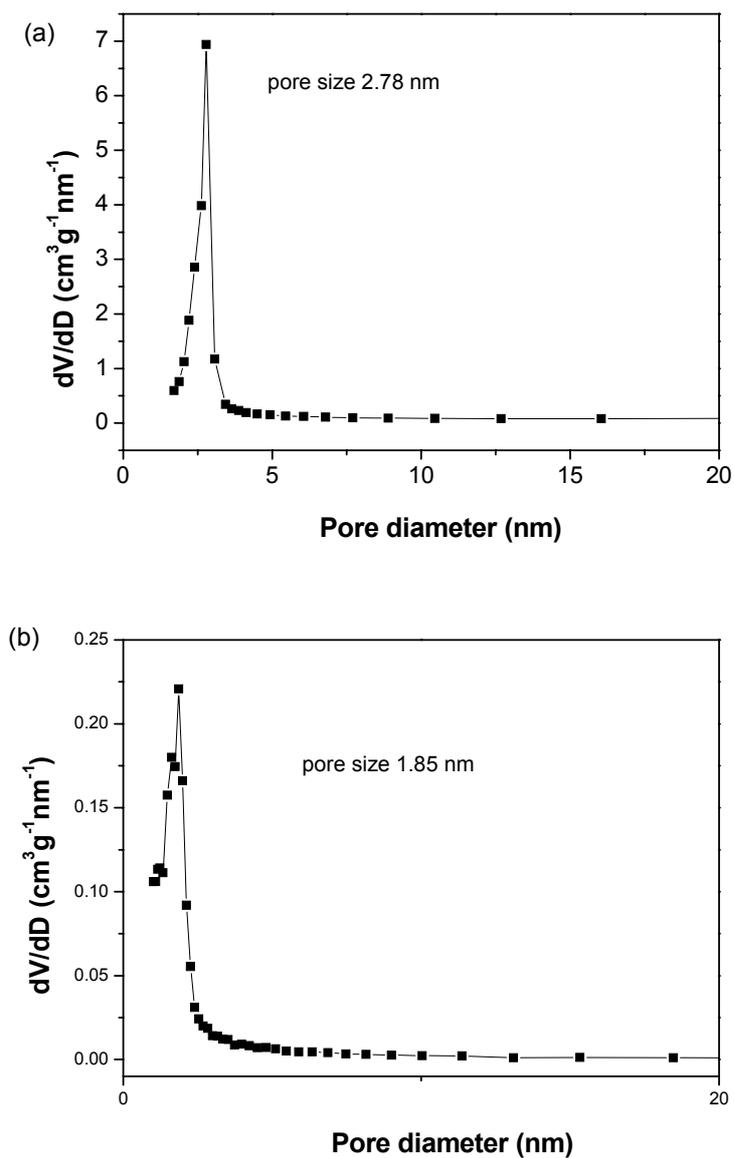


Figure S1. The corresponding Barrett-Joiner-Halenda (BJH) pore distributions of (a) MSN and (b) MSN-RBH.

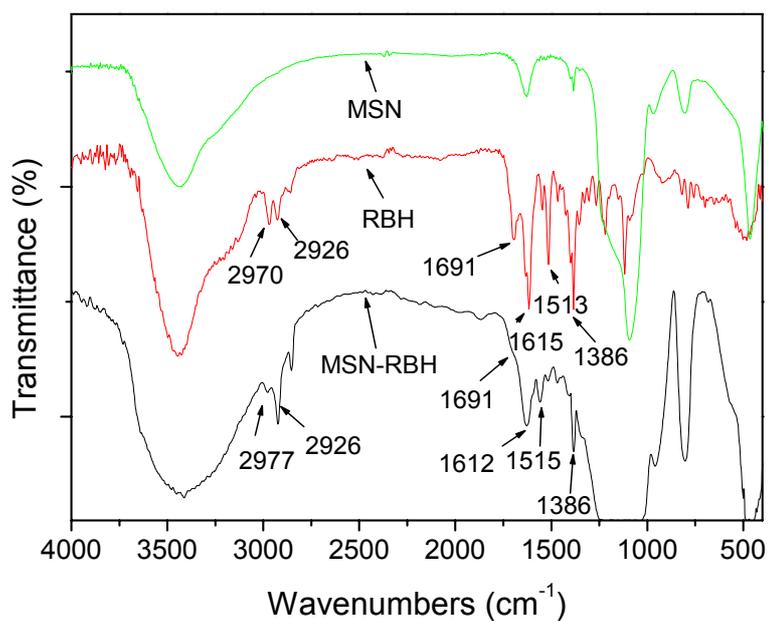


Figure S2. FT-IR spectra of MSN, RBH and MSN-RBH.

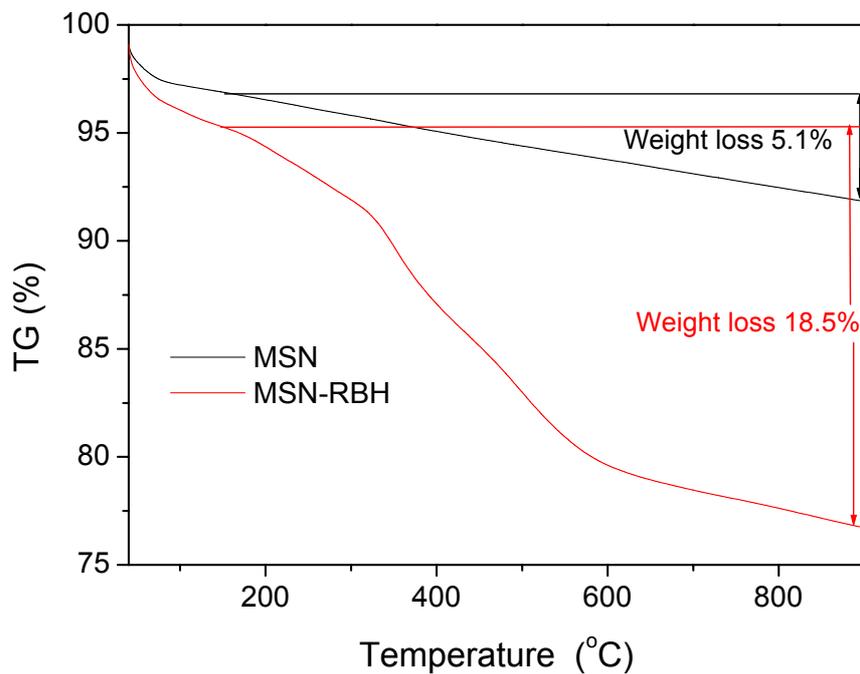


Figure S3. TGA traces of MSN and MSN-RBH.

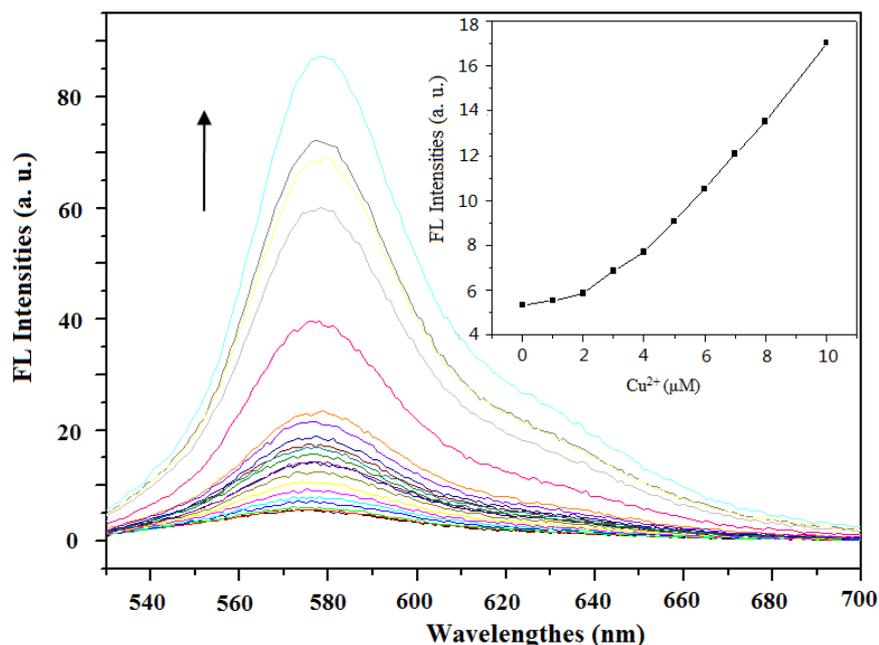


Figure S4. Fluorescence responses of 50 μM of MSN-RBH upon addition of 1-10 μM Cu²⁺ in CH₃CN/HEPES (50 mM, pH 7.2, 3:7, v/v) solution by centrifugation at 12000 rpm for 20 min. In set shows the fluorescence intensity at 580 nm of MSN-RBH as a function of Cu²⁺ concentration.

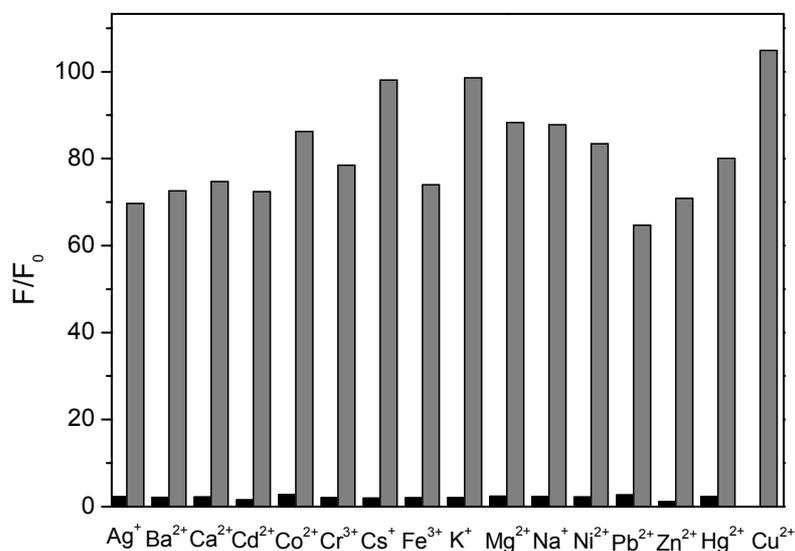


Figure S5. Fluorescence intensity changes (F/F_0) of 50 μM MSN-RBH upon the addition of various metal ions (500 μM) in CH₃CN/HEPES (50 mM, pH 7.2, 3:7, v/v) solution by centrifugation at 12000 rpm for 10 min. Dark bars represent the fluorescence response of MSN-RBH to the metal ion of interest. Gray bars represent the subsequent addition of 500 μM Cu²⁺ to above solutions. Excitation and emission was at 510 and 580 nm, respectively.

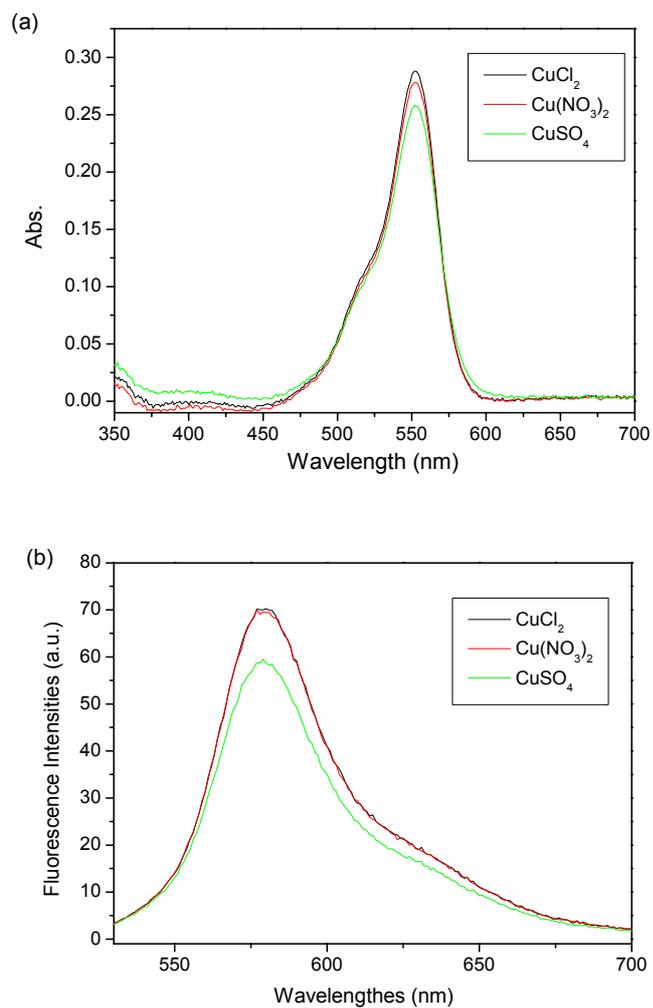


Figure S6. (a) UV/Vis absorption spectra and (b) fluorescence responses of MSN-RBH (100 μM) upon addition of 500 μM of CuCl₂, Cu(NO₃)₂ and CuSO₄ in CH₃CN/HEPES (50 mM, pH 7.2, 3:7, v/v).

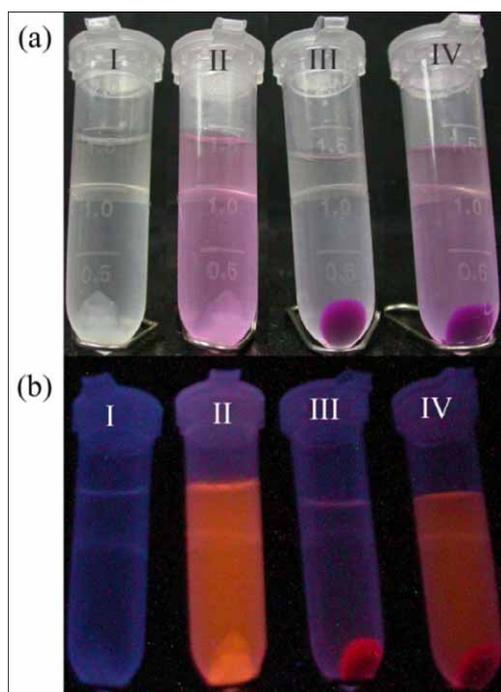


Figure S7. The brightfield (a) and the fluorescence pictures (b) of (I) MSN-RBH only, (II) MSN-RBH with Cu^{2+} , (III) MSN-RBH with Hg^{2+} , and (IV) MSN-RBH with Cu^{2+} and Hg^{2+} after centrifugation processes at 12000 rpm for 10 min.

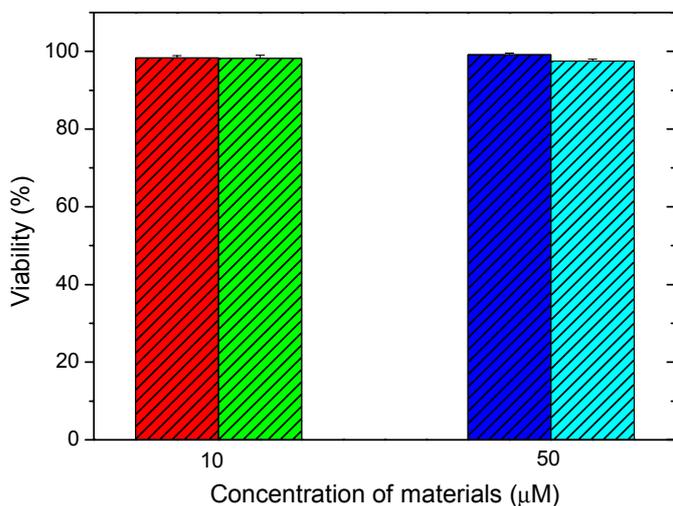


Figure S8. Cell viability values (%) estimated by Trypan blue tests of KB cells cultured with diverse concentration of the nanoprobe.

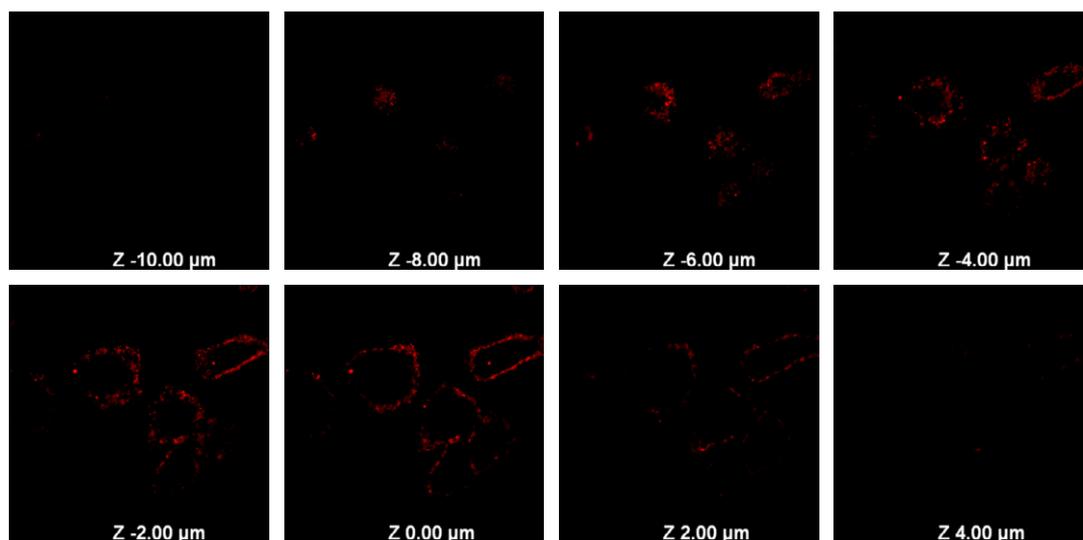


Figure S9. Z-scan images of KB Cells supplemented with 50 μM CuCl_2 in the growth media for 20 h at 37 $^\circ\text{C}$ and then incubated with 5 μM MSN-RBH for 3 h at 25 $^\circ\text{C}$ ($\lambda_{\text{ex}}=543$ nm).