Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

A novel reversible colorimetric chemosensor for the detection of Cu^{2+} based on water-soluble polymer containing rhodamine receptor pendants

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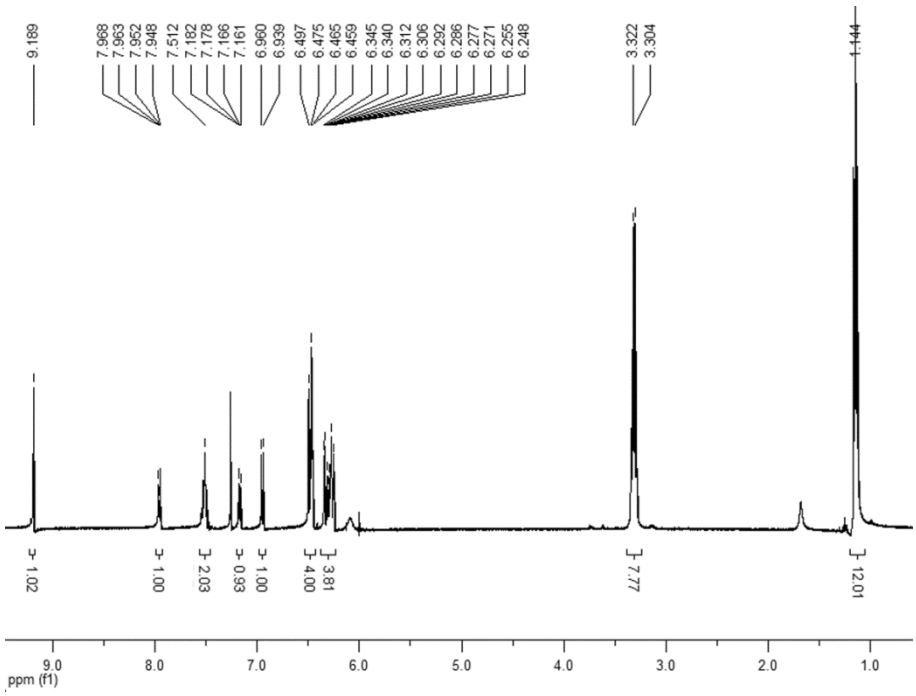

Fig. S1 ^{1}H NMR spectrum of RhBHB in $CDCl_3$.

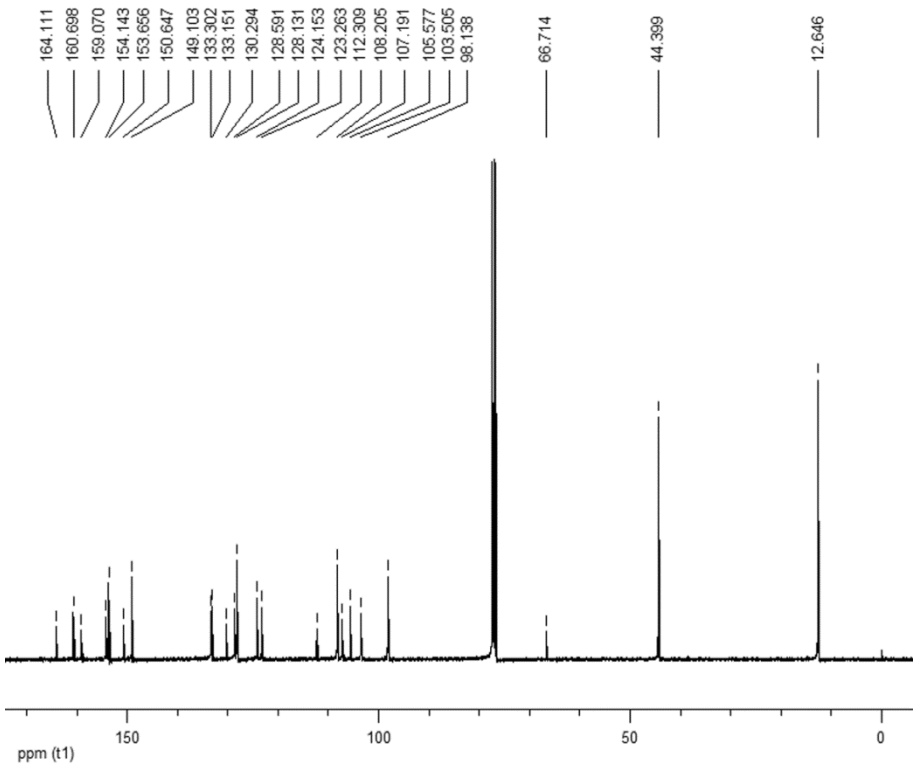

Fig. S2 ^{13}C NMR spectrum of RhBHB in $CDCl_3$.

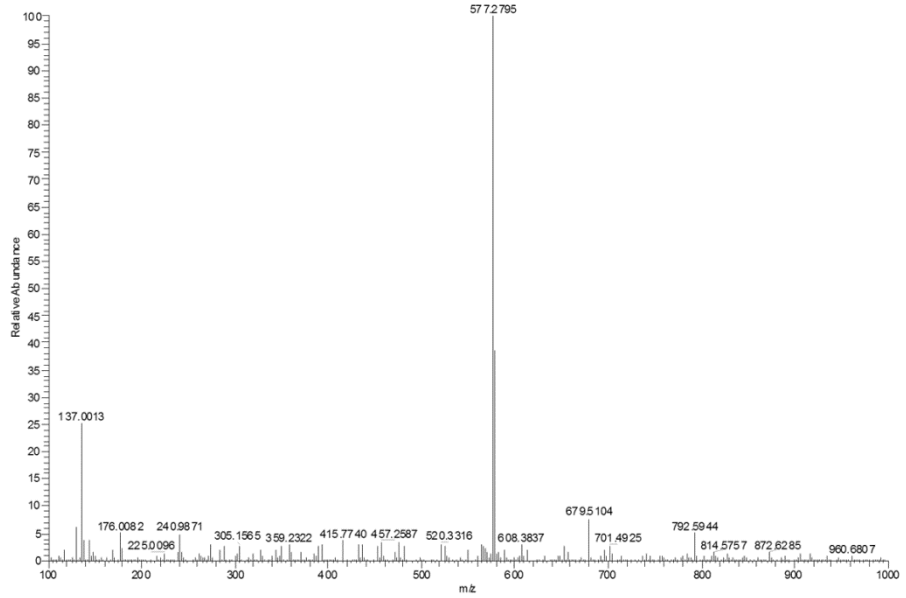

Fig. S3 HRMS of RhBHB.

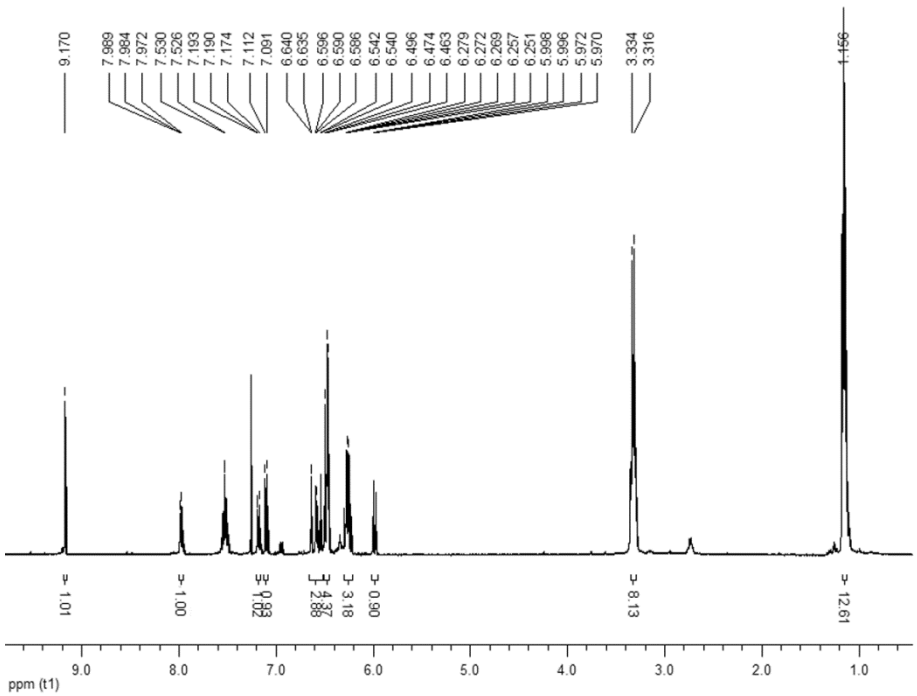

Fig. S4 ^{1}H NMR spectrum of RhBBA in $CDCl_3$.

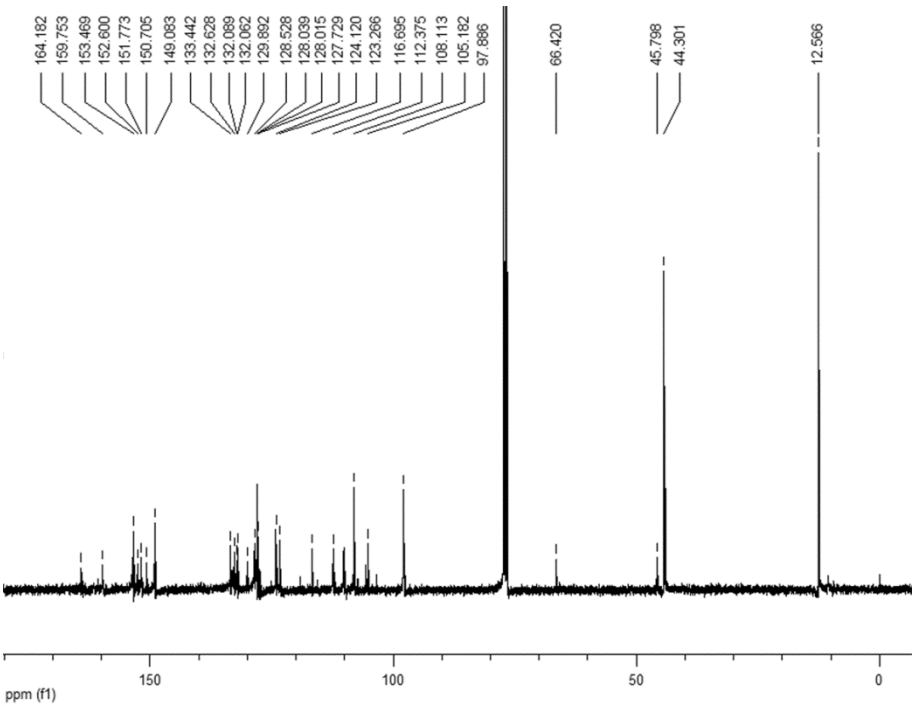

Fig. S5 ^{13}C NMR spectrum of RhBBA in $CDCl_3$.

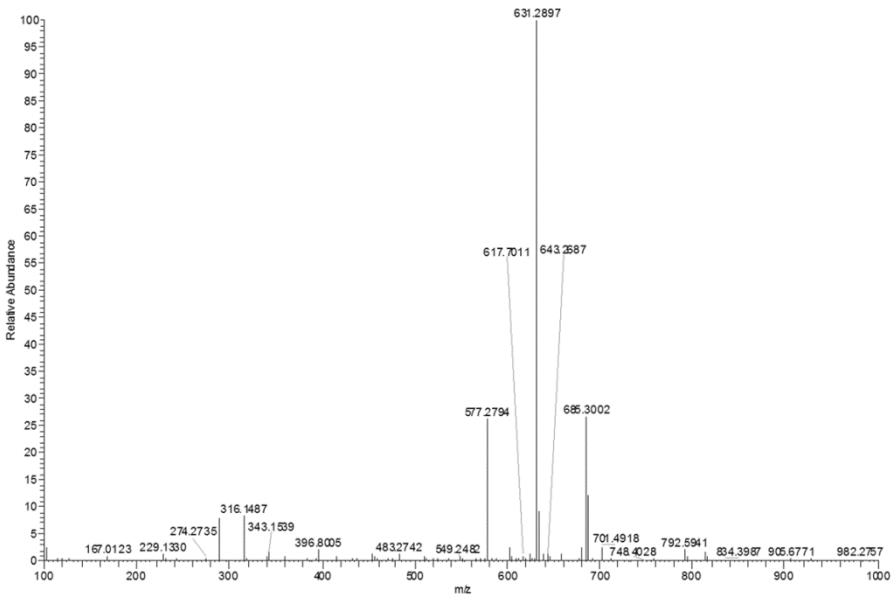

Fig. S6 HRMS of RhBBA.

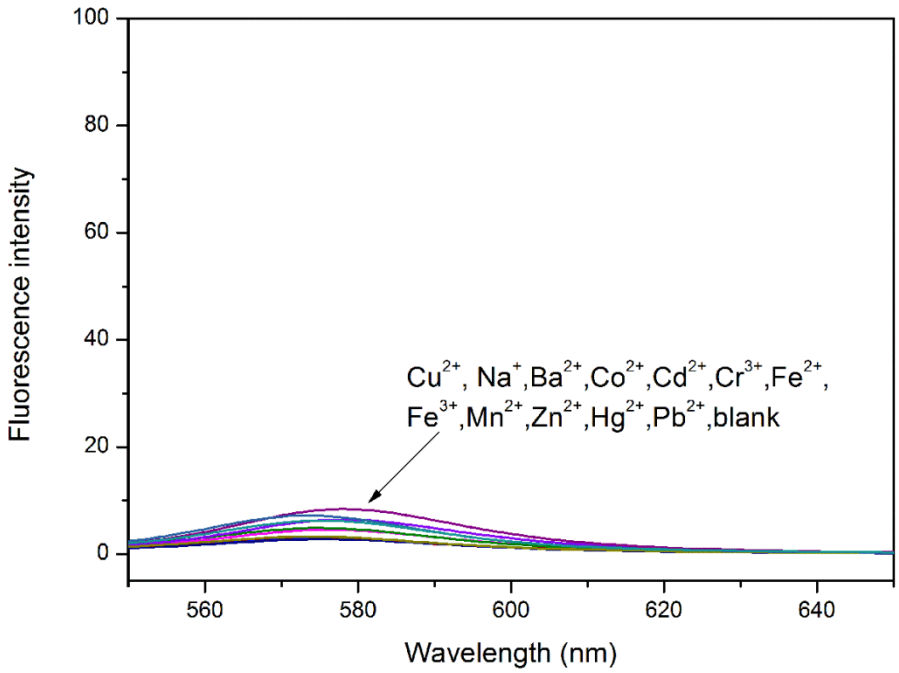

Fig. S7 Fluorescence spectra of P(HEA-*co*-RhBBA) in aqueous solution (10 μM RhBBA) upon addition of 5 equiv. of various metal ions. (Ex. 520 nm)

Fig. S8 Color changes of P(HEA-*co*-RhBBA) in aqueous solution upon addition of varying quantities of Cu^{2+} ions (from left to right: 0, 0.05, 0.1, 0.25, 0.5, 1.0, 2.0 equiv.).

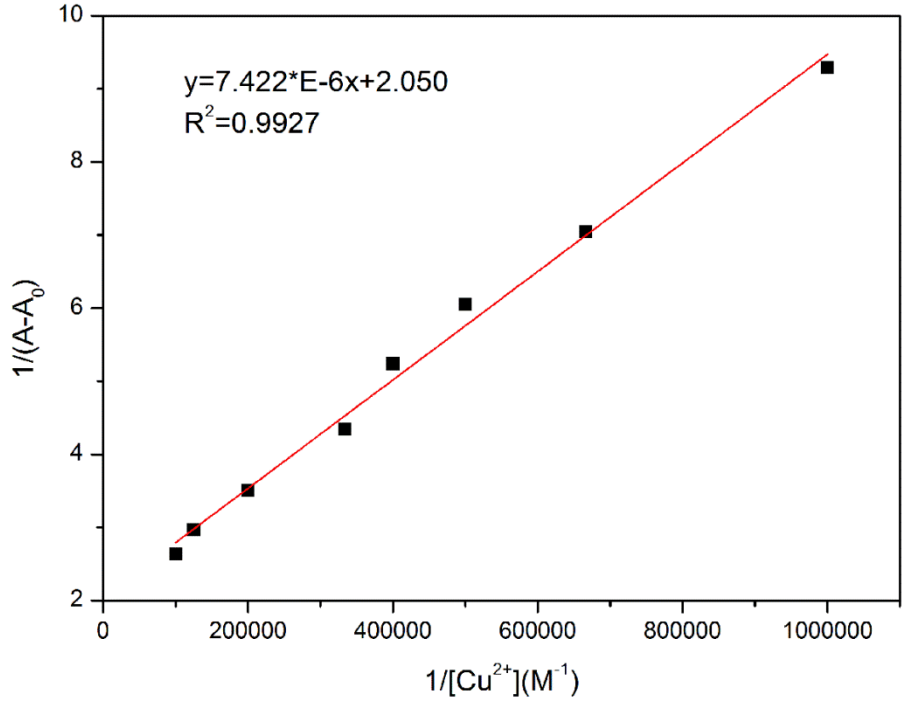

Fig. S9 Benesi-Hildebrand plot (absorbance at 561 nm) of P(HEA-*co*-RhBBA) with Cu^{2+}.

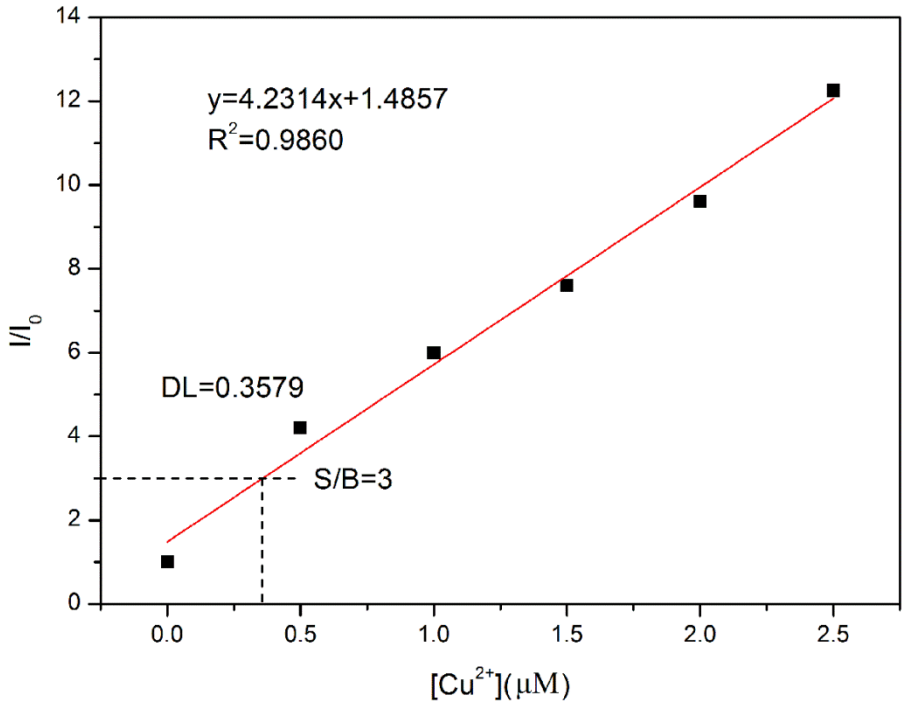

Fig. S10 Determination of the detection limit based on change in the ratio (absorbance at 561 nm) of P(HEA-*co*-RhBBA) (10 μM RhBBA) with Cu^{2+}.

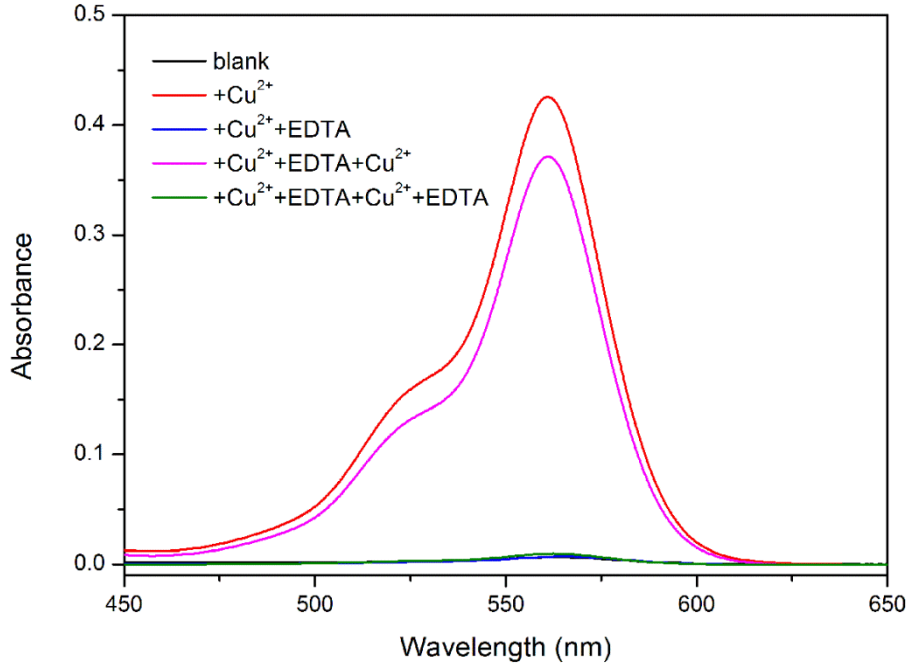

Fig. S11 UV-vis absorption spectra of P(HEA-*co*-RhBBA) in aqueous solution (10 μM RhBBA) upon alternate addition of 2 equiv. of Cu^{2+} and 2 equiv. of EDTA ions.

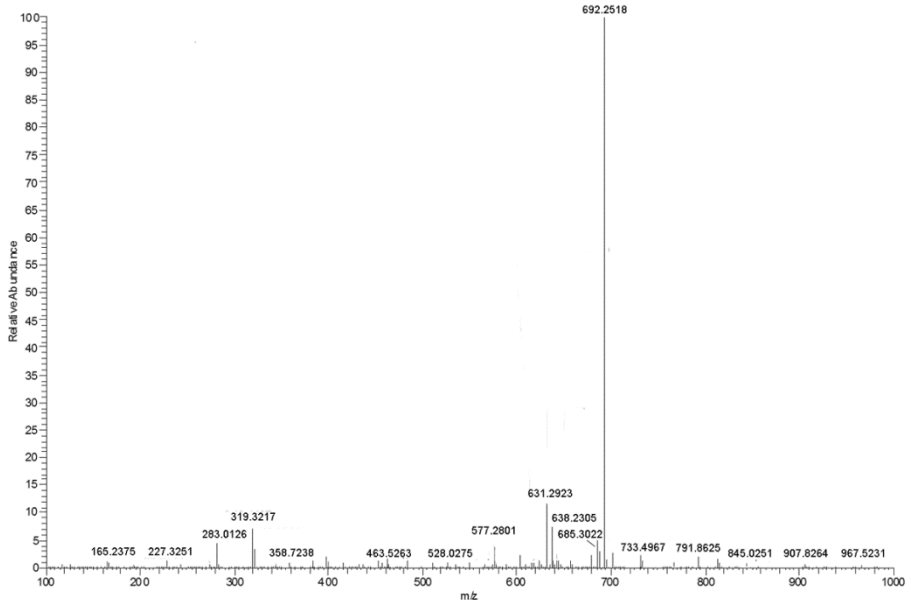

Fig. S12 HRMS of RhBBA-Cu^{2+}.

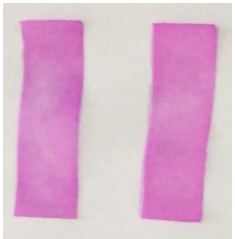

Fig. S13 Colorimetric detection of Cu^{2+} ions by test strips after being immersed into different Cu^{2+} aqueous solutions (10^{-4} M) (left: tap water; right: river water).