

Supporting Information

Recognition of Silver Cations by a Cucurbit[8]uril-induced

Supramolecular Crown Ether

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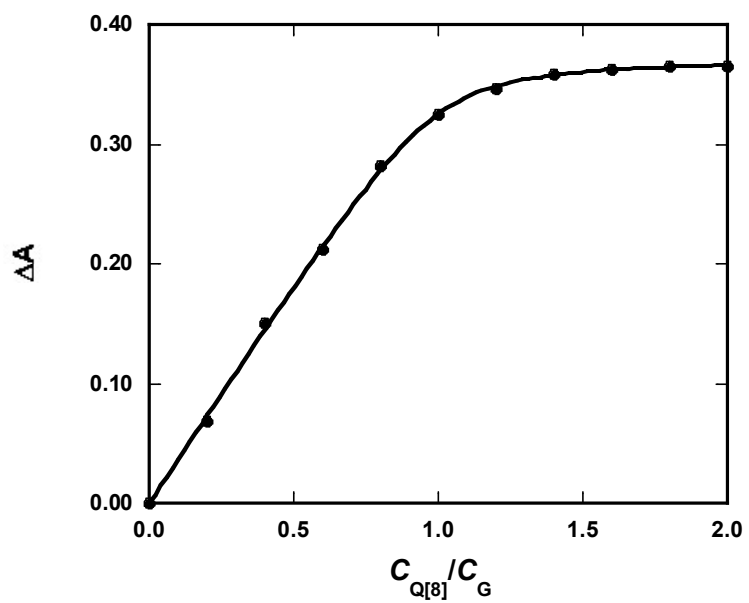


Fig. S1 Non-linear fitting of the absorption data for Q[8] with guest **3**.

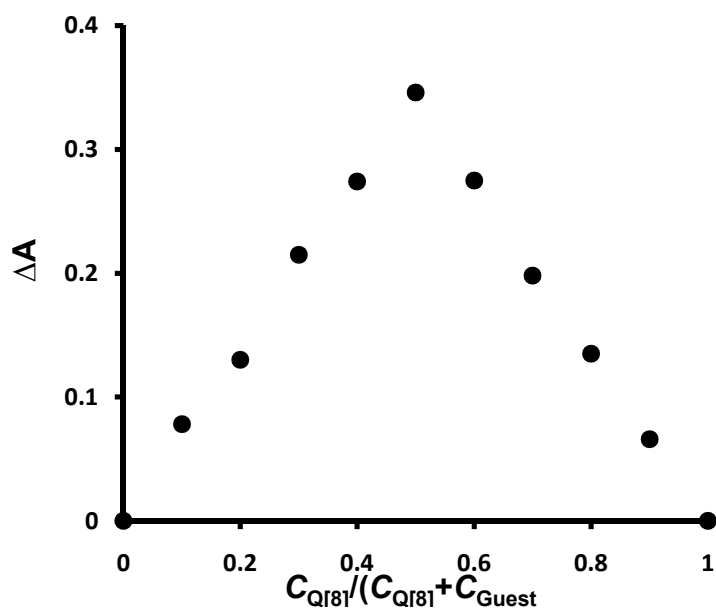


Fig. S2 Job plot of the host–guest interaction between **guest 3** and Q[8] in aqueous solution. The total concentration of the reactants is $1.0 \times 10^{-4} \text{ mol} \cdot \text{L}^{-1}$ ($\lambda = 266 \text{ nm}$).

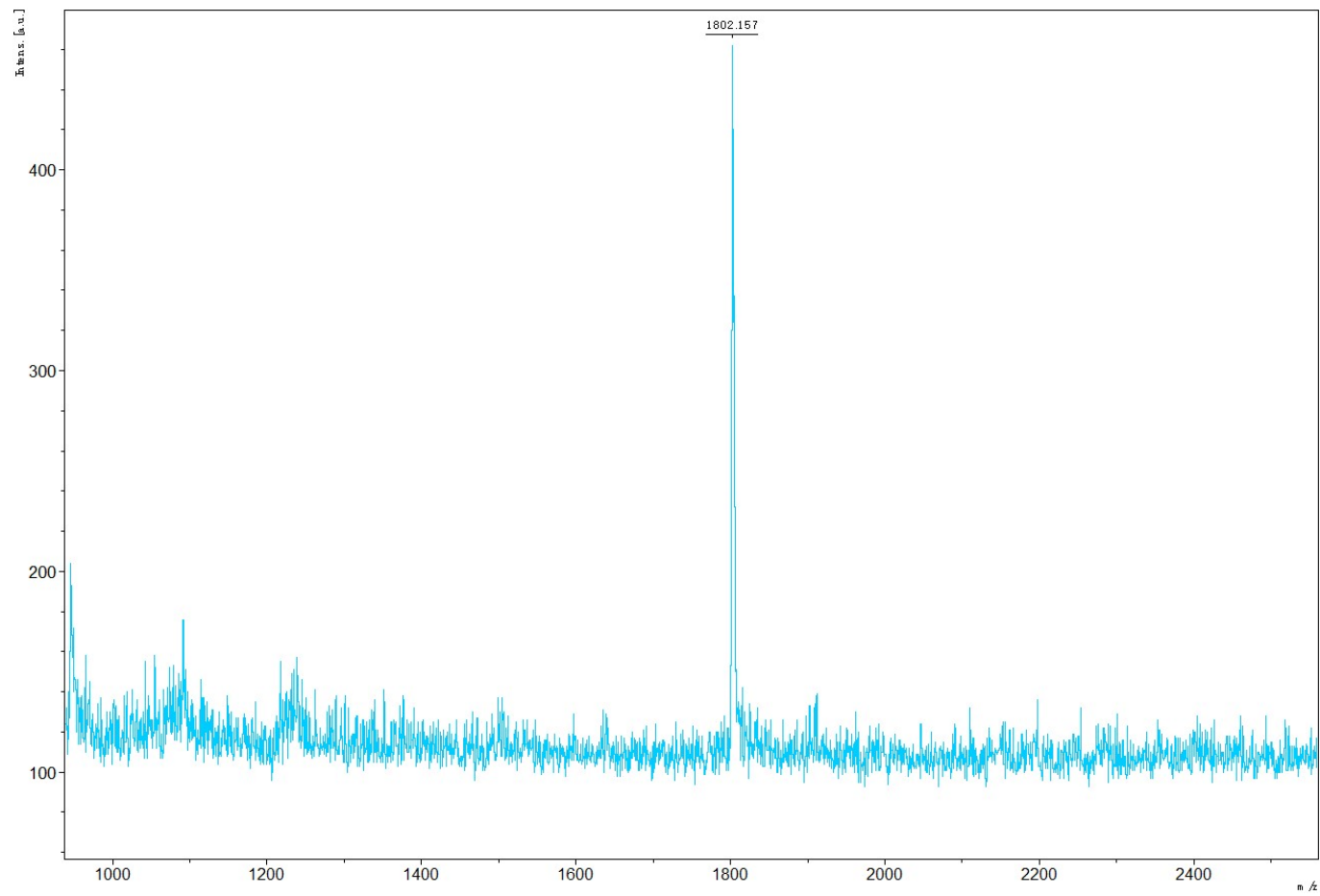


Fig. S3 TOF-MS of the inclusion complex of Q[8] with guest **3**.

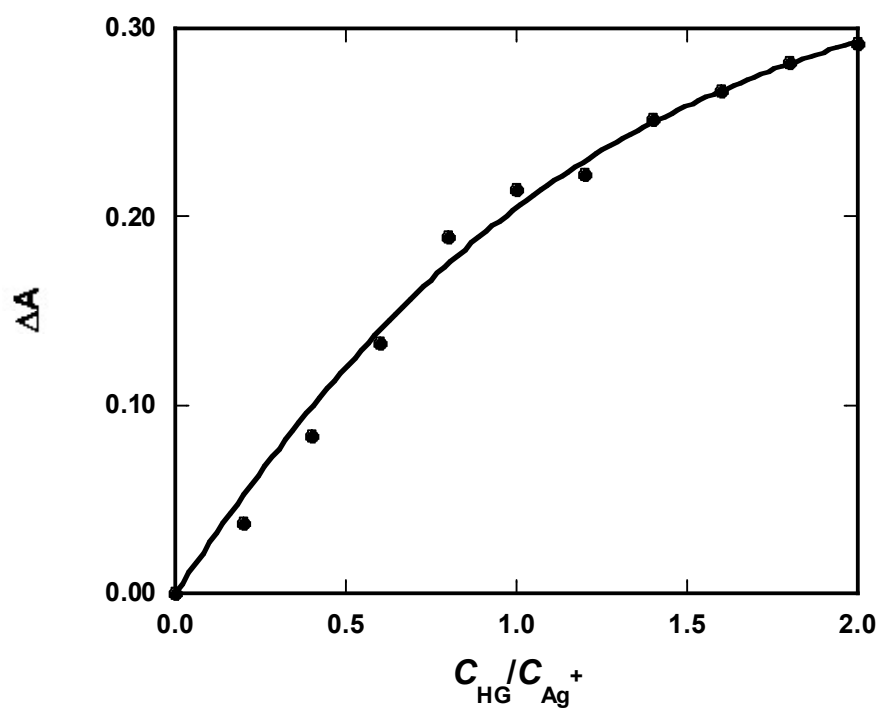


Fig. S4 Non-linear fitting curve for changes in the absorption intensity of the inclusion complex in the presence of different concentrations of Ag^+ ($\lambda = 266$ nm).

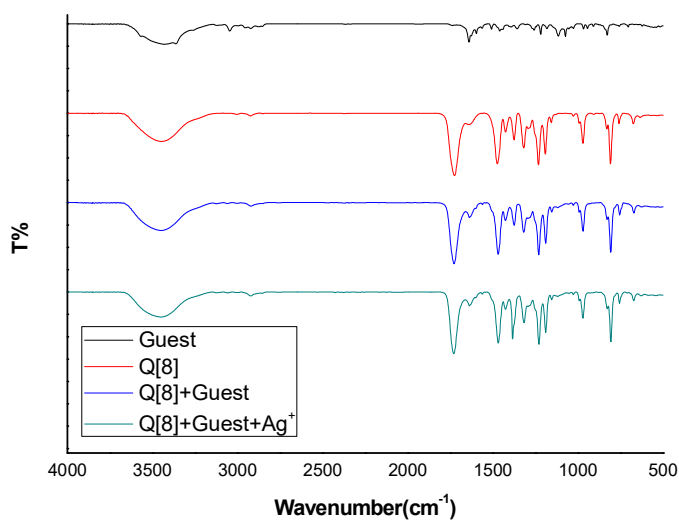


Fig. S5 IR spectra of free Guest, free Q[8], inclusion complex (Q[8]+Guest) and the complex formed by the inclusion complex and Ag⁺ (Q[8]+Guest+Ag⁺).

The IR spectra were recorded on a Bruker Vertex 70 FT-IR spectrophotometer using KBr pellets. The inclusion complex was prepared by stirring the mixture solution of Q[8] with the guest in H₂O in a ratio of 1:1, and then the solvent was removed in vacuum to get the solid inclusion complex. And the same way is used to deal with the coordination compound which was formed by the inclusion complex and 1 equiv. Ag⁺.

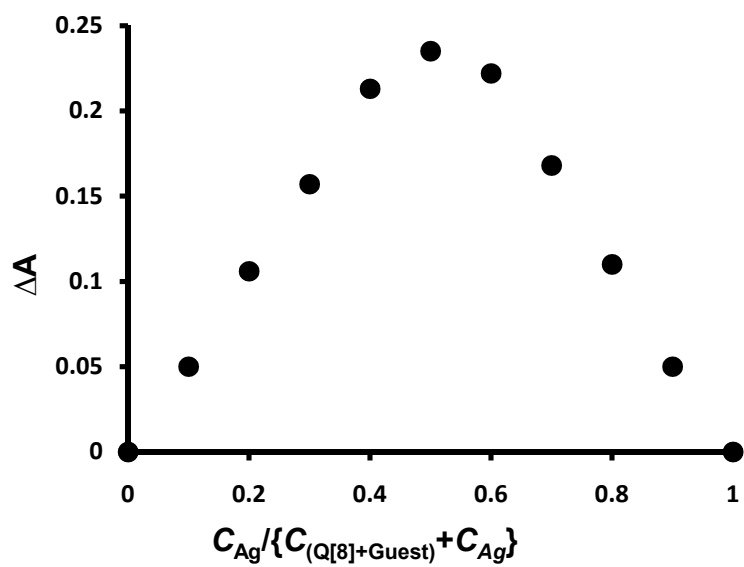


Fig. S6 Job plot of the interaction between the guest complex with Q[8] and Ag^+ in aqueous solution. The total concentration of the reactants is $1.0 \times 10^{-4} \text{ mol} \cdot \text{L}^{-1}$ ($\lambda = 266 \text{ nm}$).

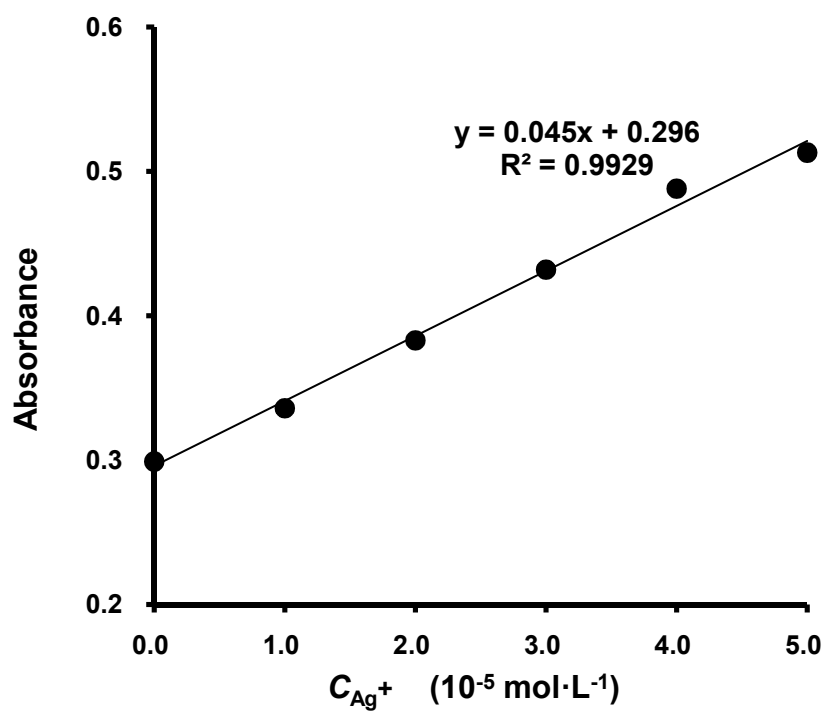


Fig. S7 Linear dynamic response of the inclusion complex of Q[8] with guest **3** to Ag^+ .

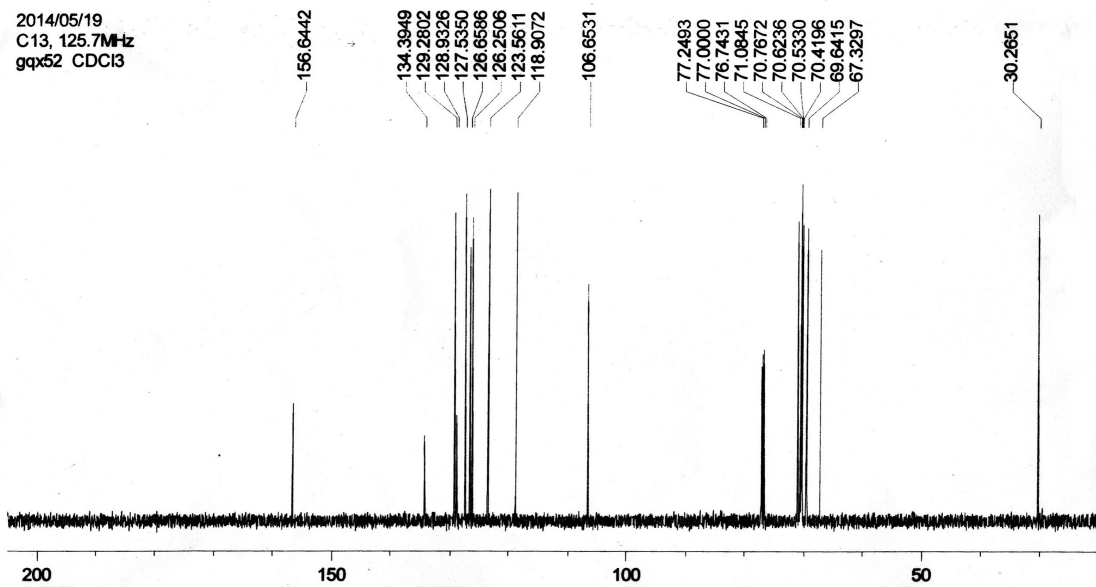
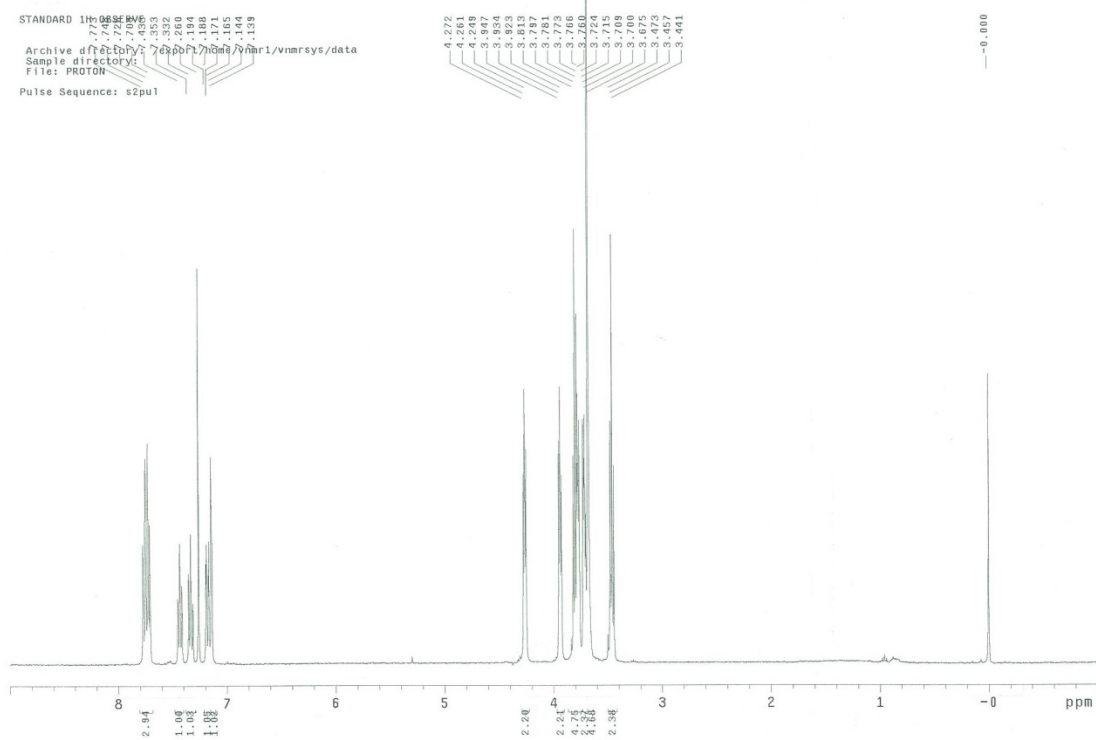
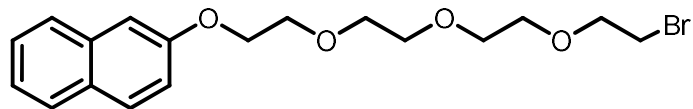


Fig. S8 ^1H and ^{13}C NMR spectra of compound 1.

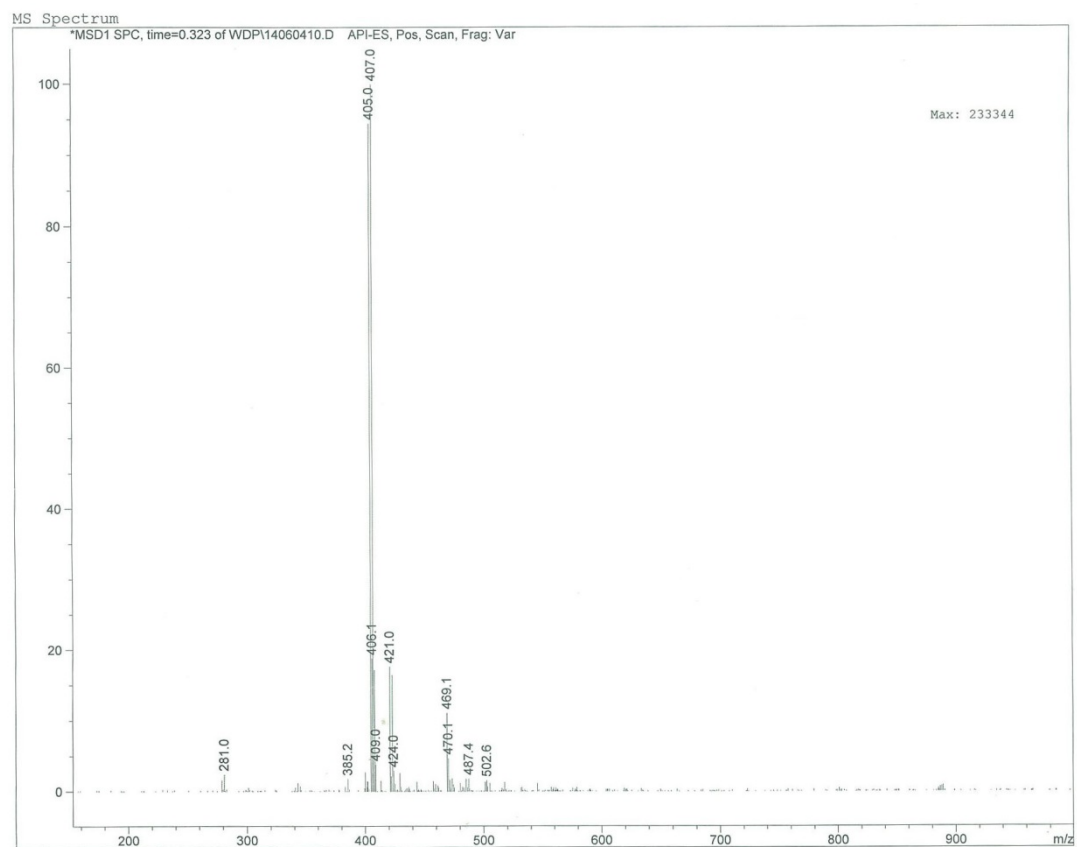


Fig. S9 ESI-MS spectrum of **compound 1**.

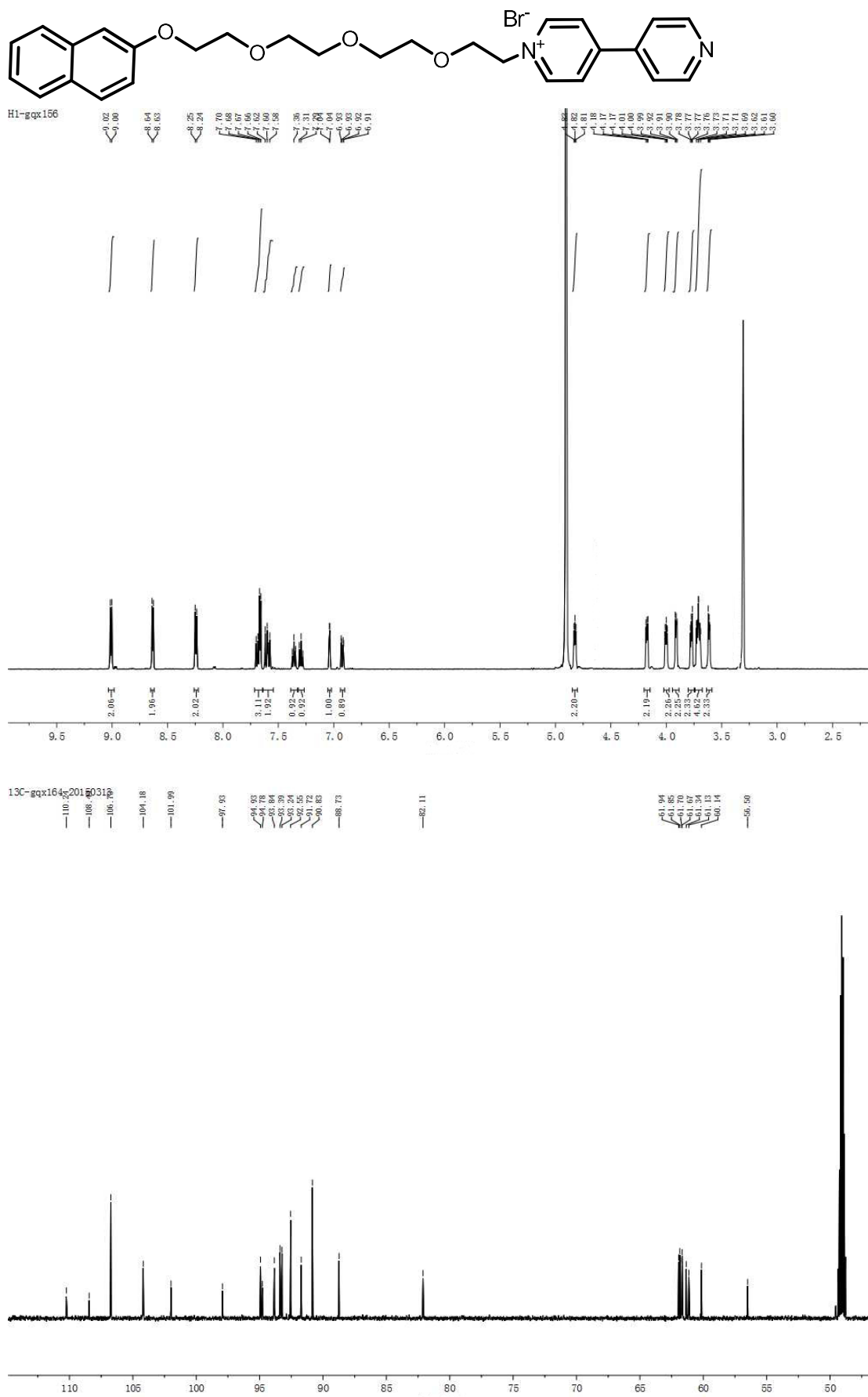


Fig. S10 ¹H and ¹³C NMR spectra of **compound 2**.

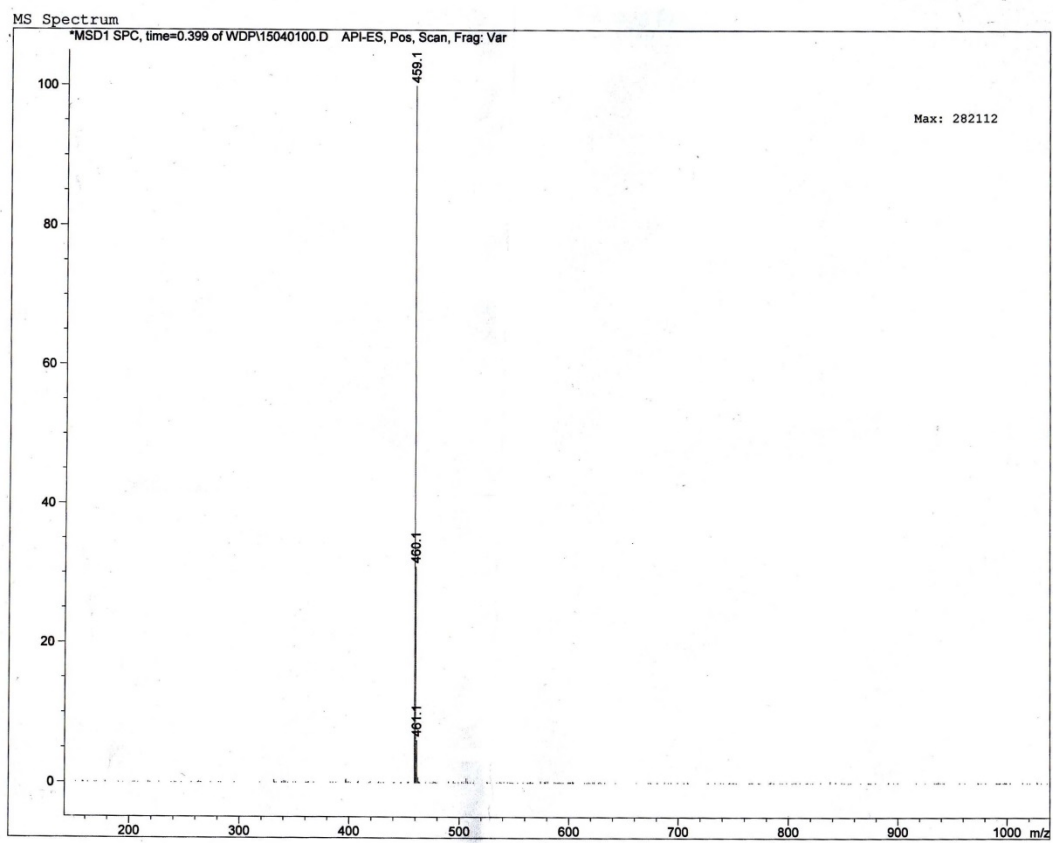


Fig. S11 ESI-MS spectrum of **compound 2**.

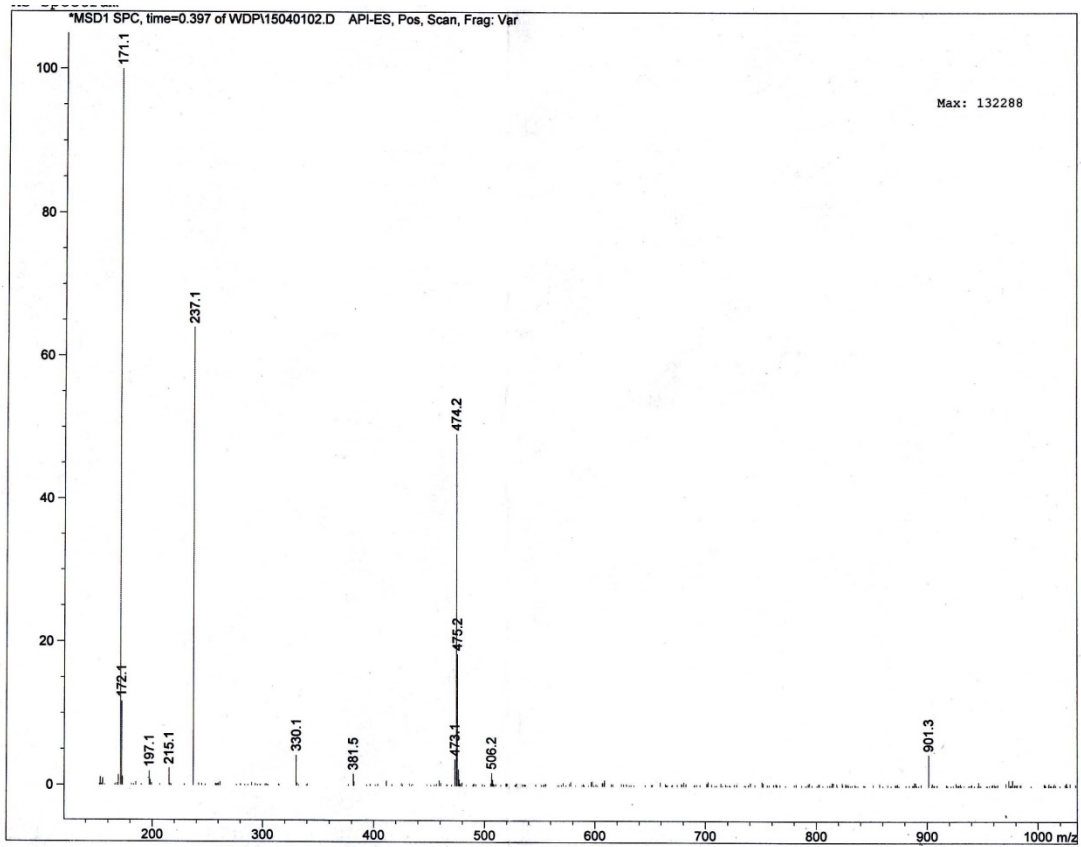


Fig. S13 ESI-MS spectrum of **compound 3**.