

## Supporting Information

### **A Supramolecular Brush Polymer via the Self-assembly of Bridged Tris( $\beta$ -cyclodextrin) with a Porphyrin Derivative and Its Magnetic Resonance Imaging**

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# 1. $^1\text{H}$ NMR, $^{13}\text{C}$ NMR, MS and HRMS spectra of compounds.

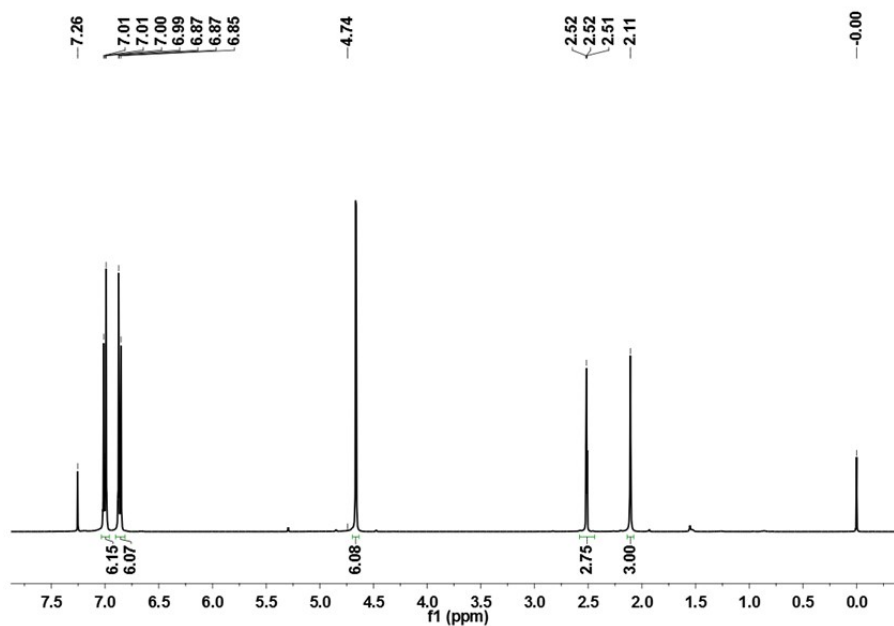


Figure S1.  $^1\text{H}$  NMR spectrum of **3** ( $\text{CDCl}_3$ , 400MHz, 298K).

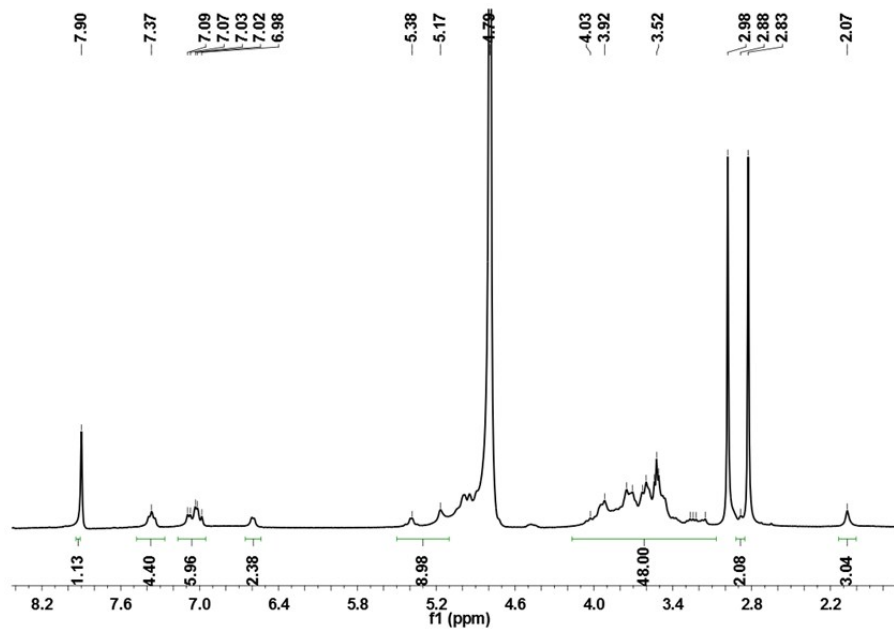


Figure S2.  $^1\text{H}$  NMR spectrum of **2** ( $\text{D}_2\text{O}$ , 400MHz, 298K).

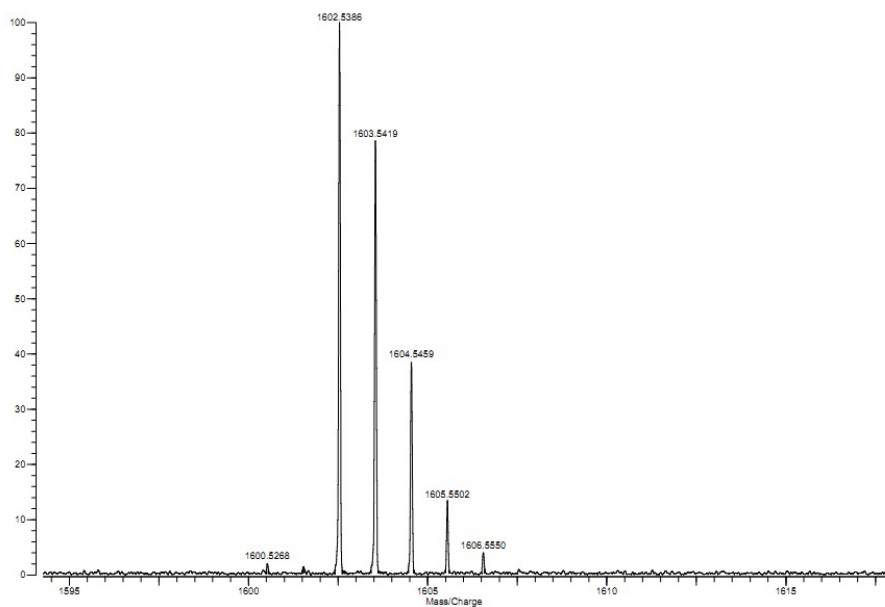


Figure S3. HRMS spectrum of 2.

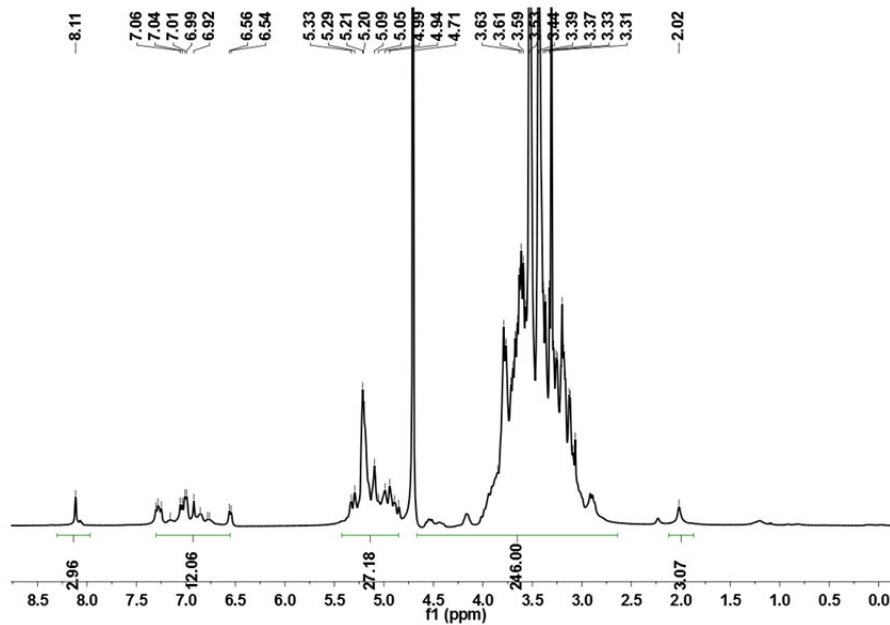
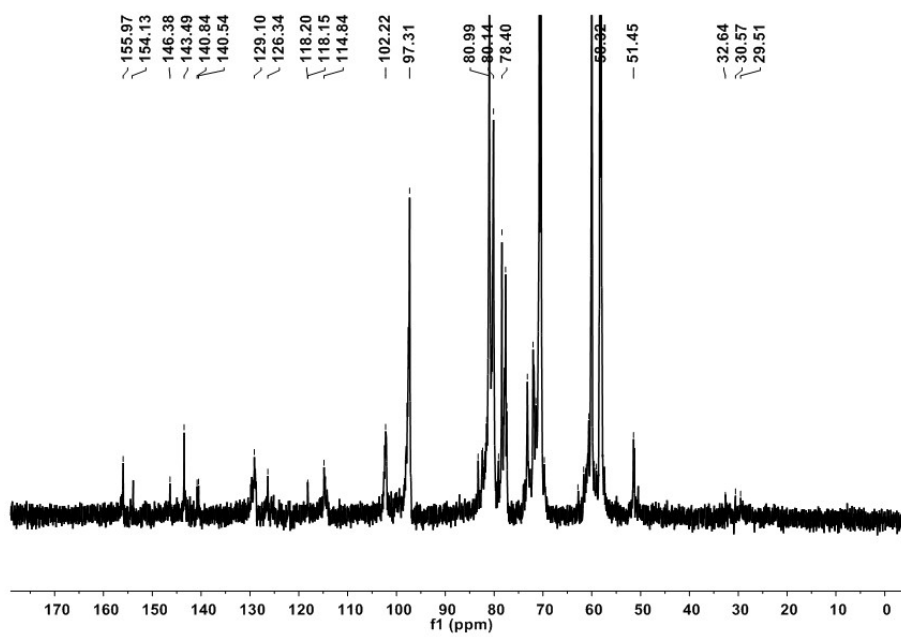
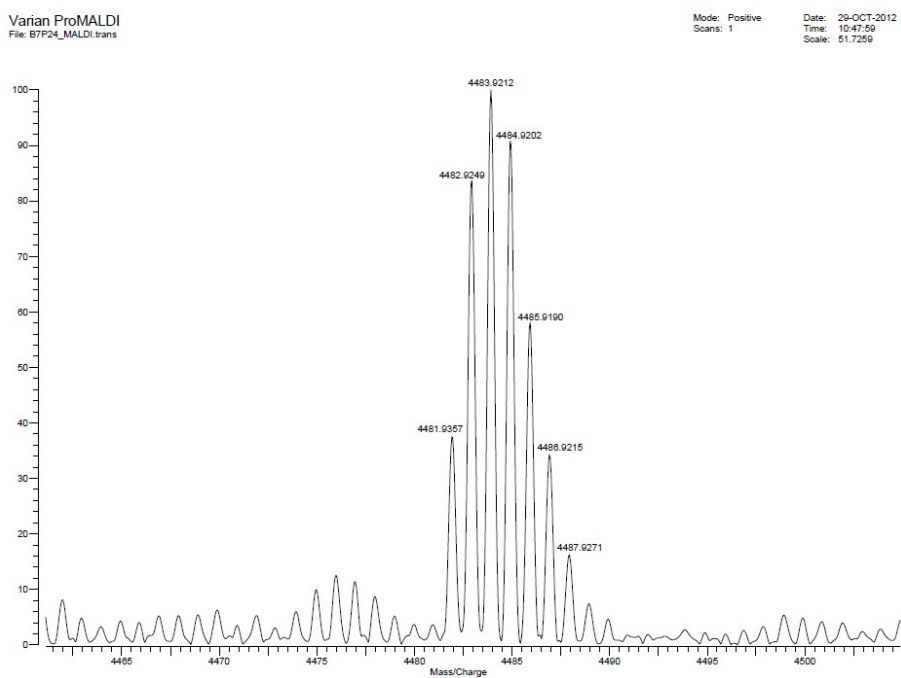


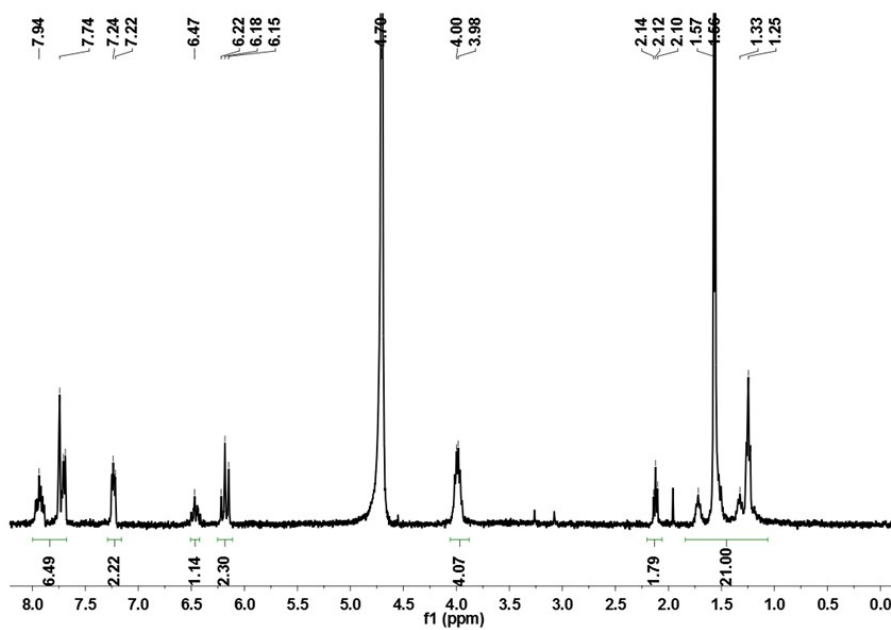
Figure S4. <sup>1</sup>H NMR spectrum of 1 (D<sub>2</sub>O, 400MHz, 298K).



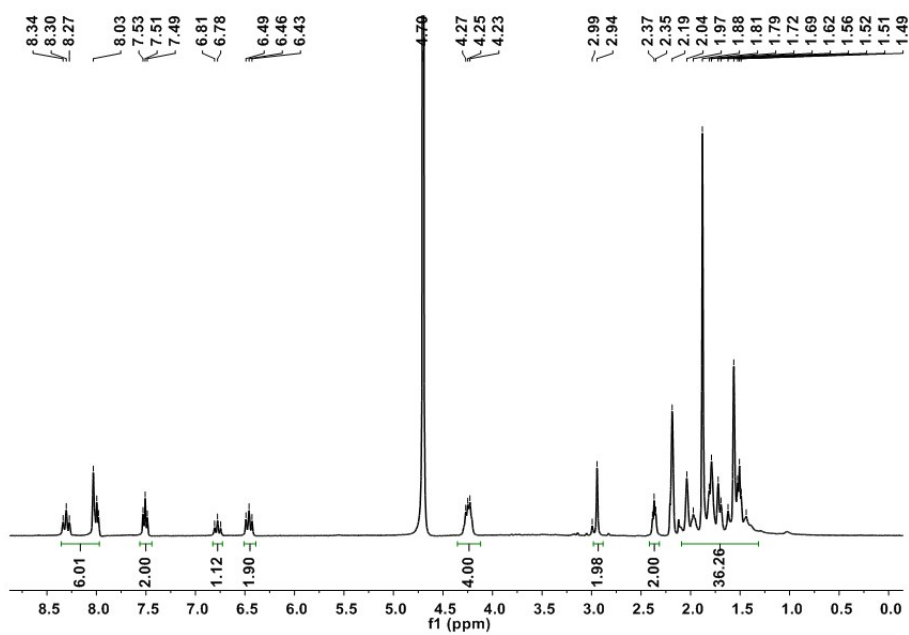
**Figure S5.**  $^{13}\text{C}$  NMR spectrum of **1** ( $\text{D}_2\text{O}$ , 100MHz, 298K).



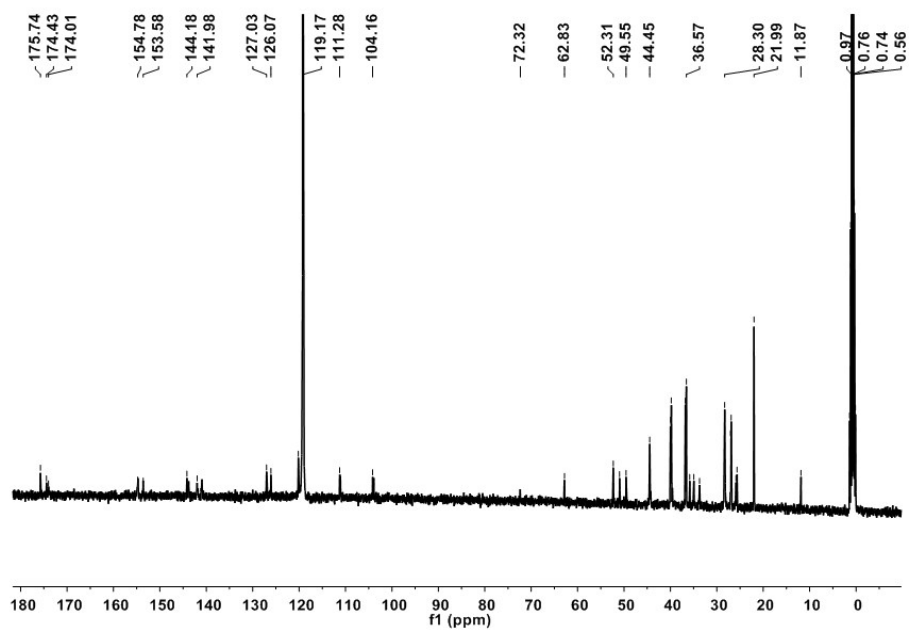
**Figure S6.** HRMS spectrum of **1**.



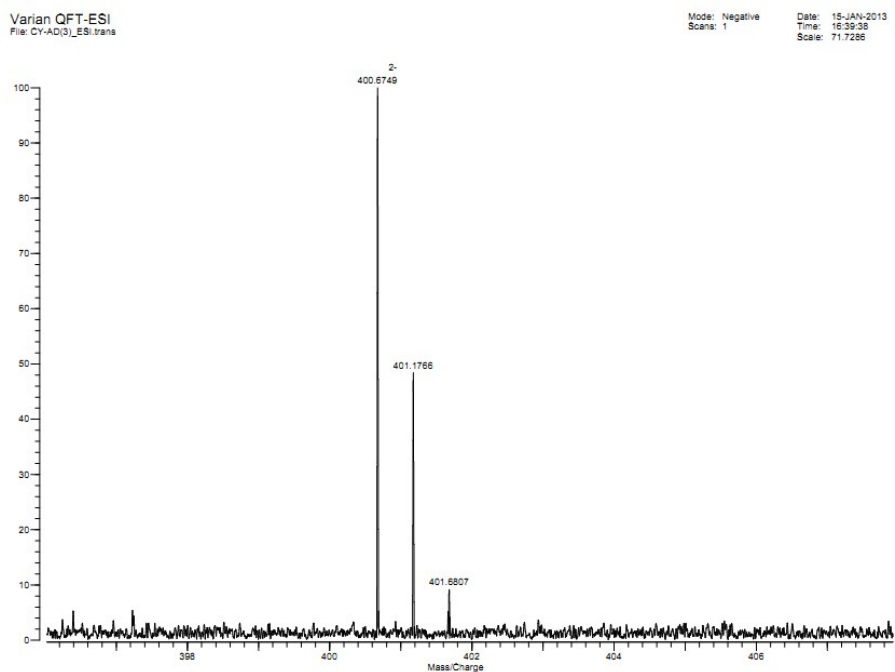
**Figure S7.**  $^1\text{H}$  NMR spectrum of Cy5 ( $\text{D}_2\text{O}$ , 400MHz, 298K).



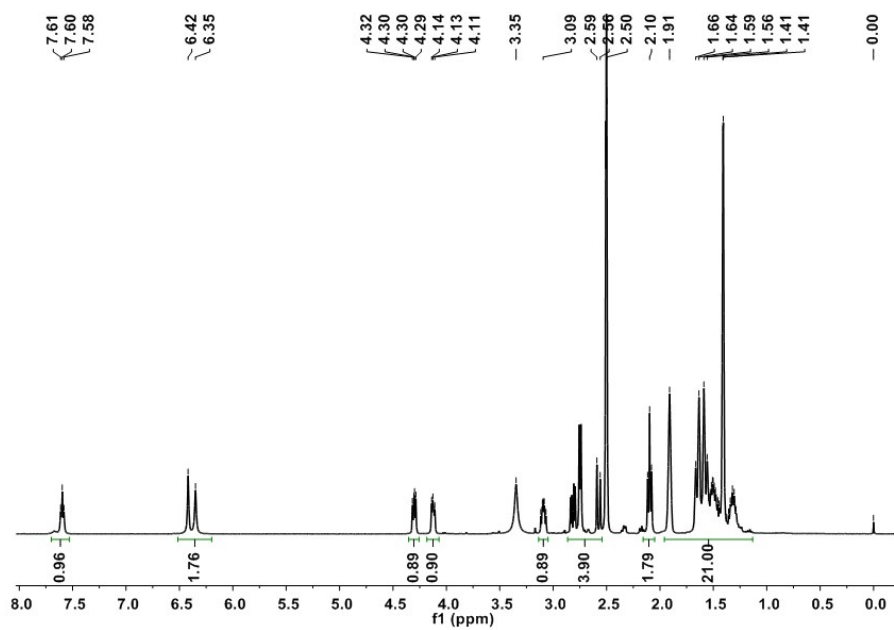
**Figure S8.**  $^1\text{H}$  NMR spectrum of Cy5-AD ( $\text{D}_2\text{O}$  and  $\text{CD}_3\text{CN}$  mixture, 400MHz, 298K).



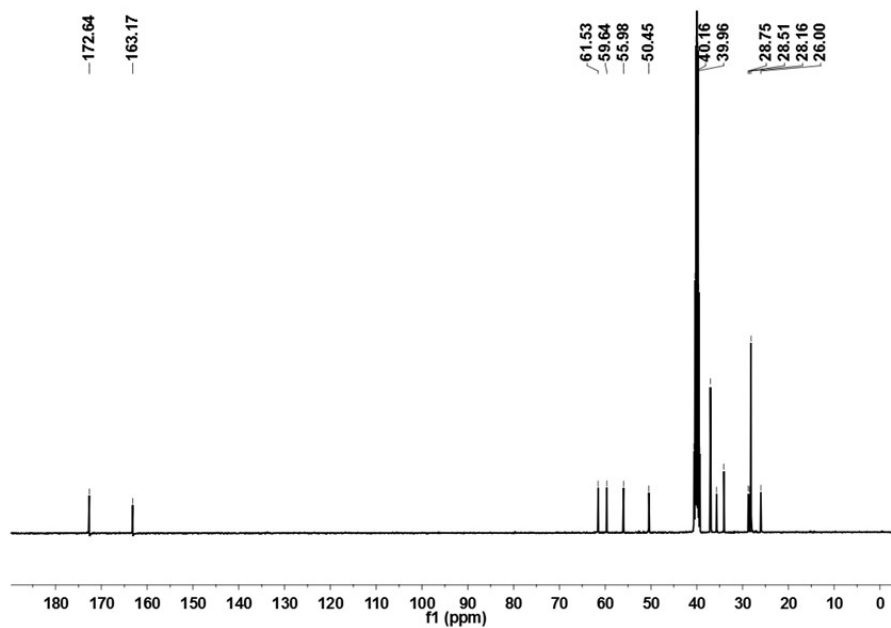
**Figure S9.**  $^{13}\text{C}$  NMR spectrum of **Cy5-AD** ( $\text{D}_2\text{O}$  and  $\text{CD}_3\text{CN}$  mixture, 100MHz, 298K).



**Figure S10.** HRMS spectrum of **Cy5-AD**.

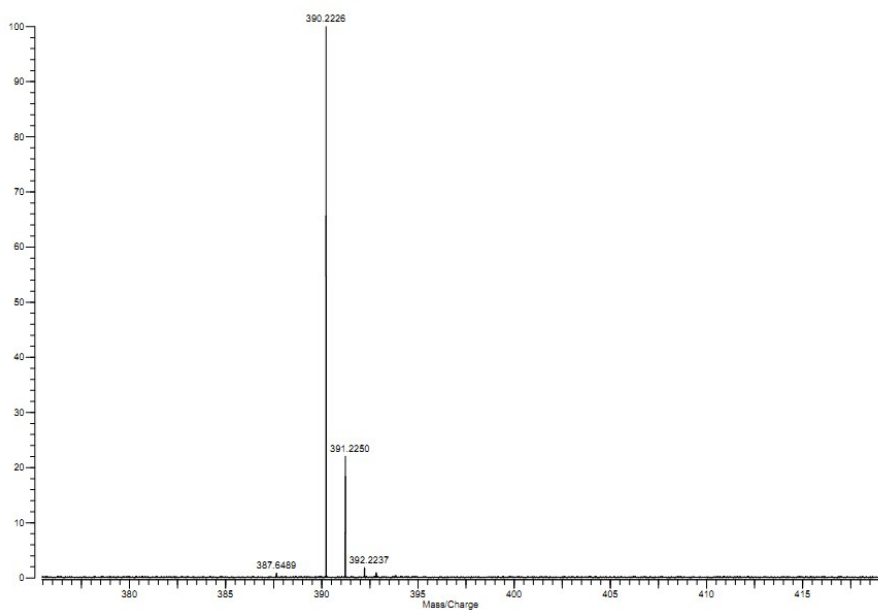


**Figure S11.**  $^1\text{H}$  NMR spectrum of **Biotin-AD** (DMSO, 400MHz, 298K).

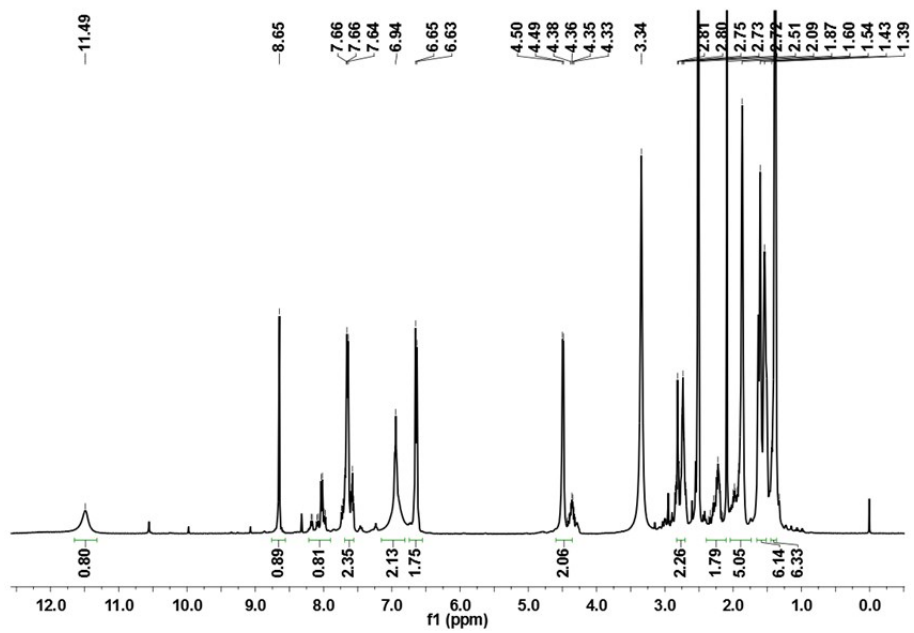


**Figure S12.**  $^{13}\text{C}$  NMR spectrum of **Biotin-AD** (DMSO, 100MHz, 298K).

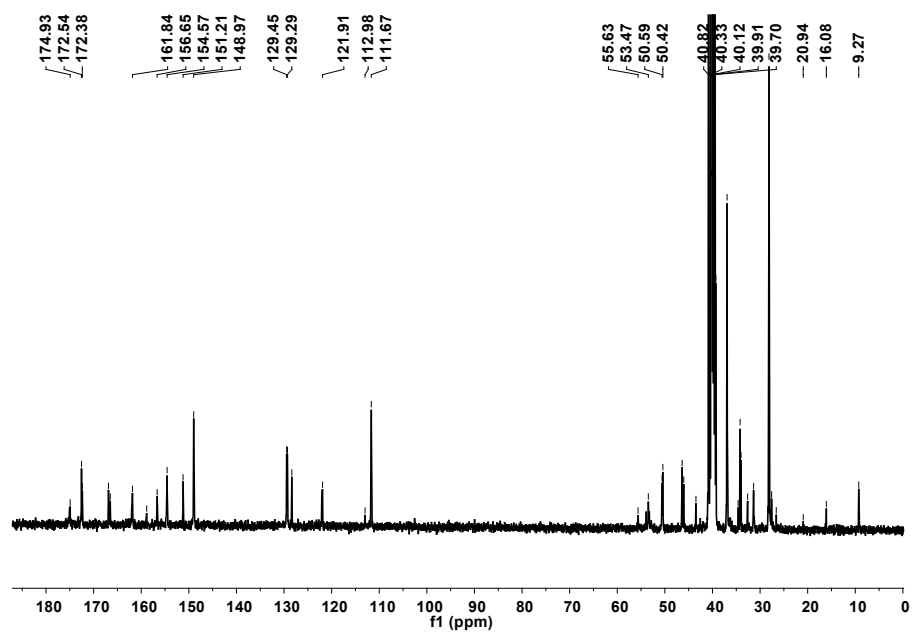




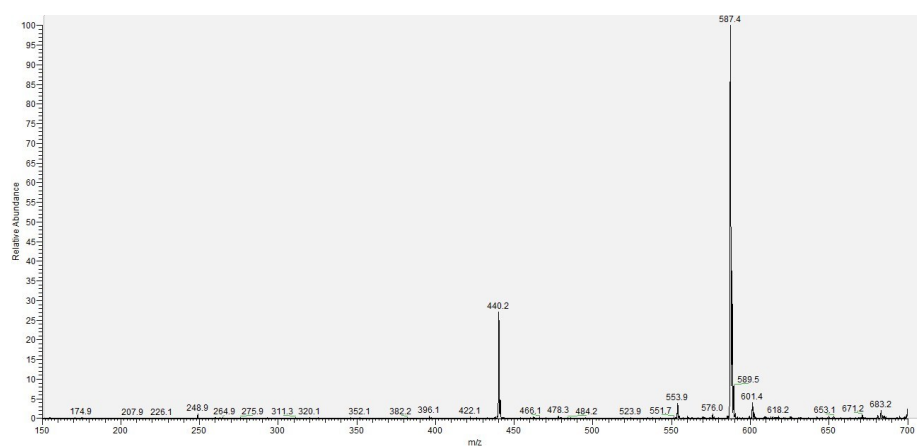
**Figure S13.** HRMS spectrum of **Biotin-AD**.



**Figure S14.**  $^1\text{H}$  NMR spectrum of FA-AD (DMSO, 400MHz, 298K).



**Figure S15.**  $^{13}\text{C}$  NMR spectrum of FA-AD (DMSO, 100MHz, 298K).



**Figure S16.** MS spectrum of FA-AD.

## 2. Binding Behaviors Between Mn(III)-TPP and 1.

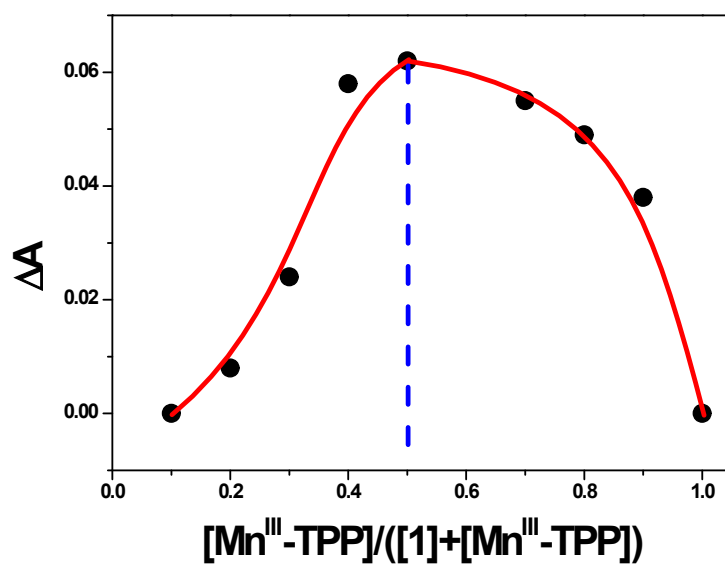


Figure S17. Job's plot of 1·Mn(III)-TPP.

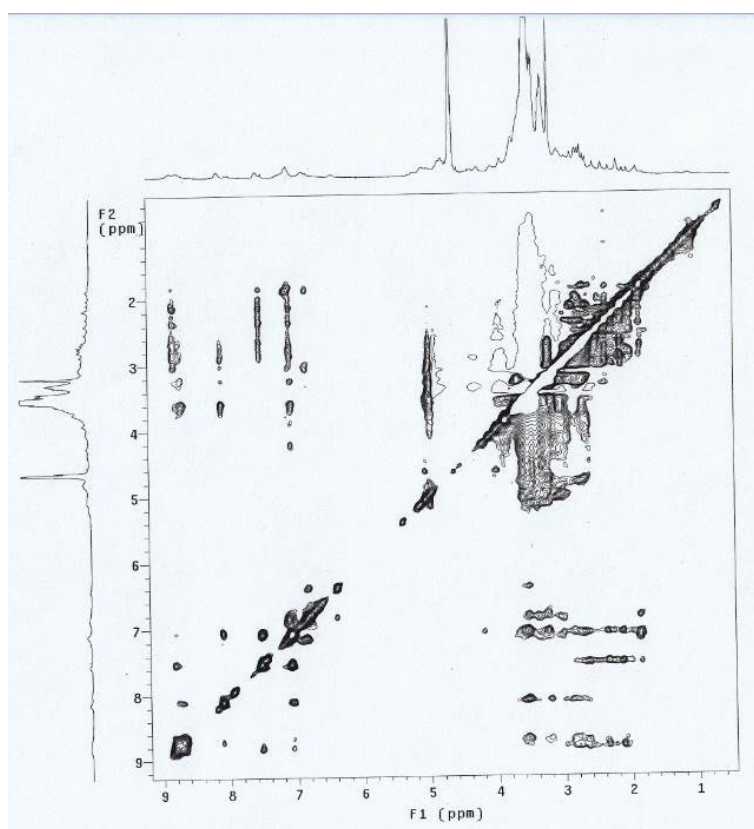
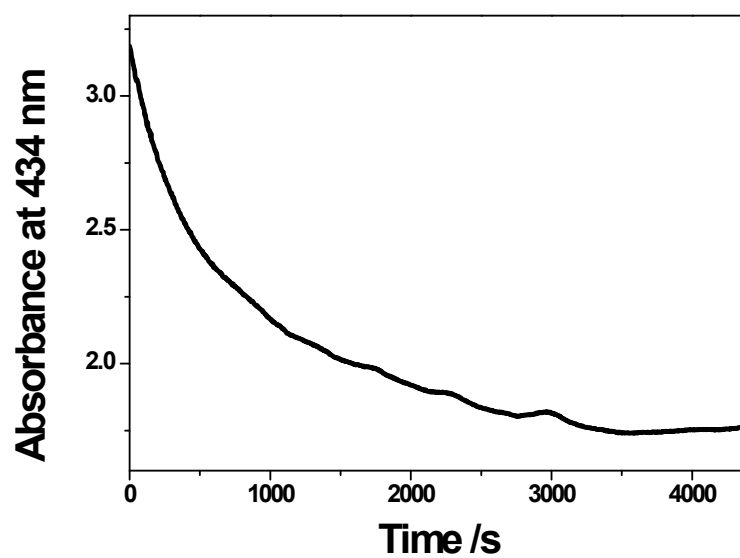


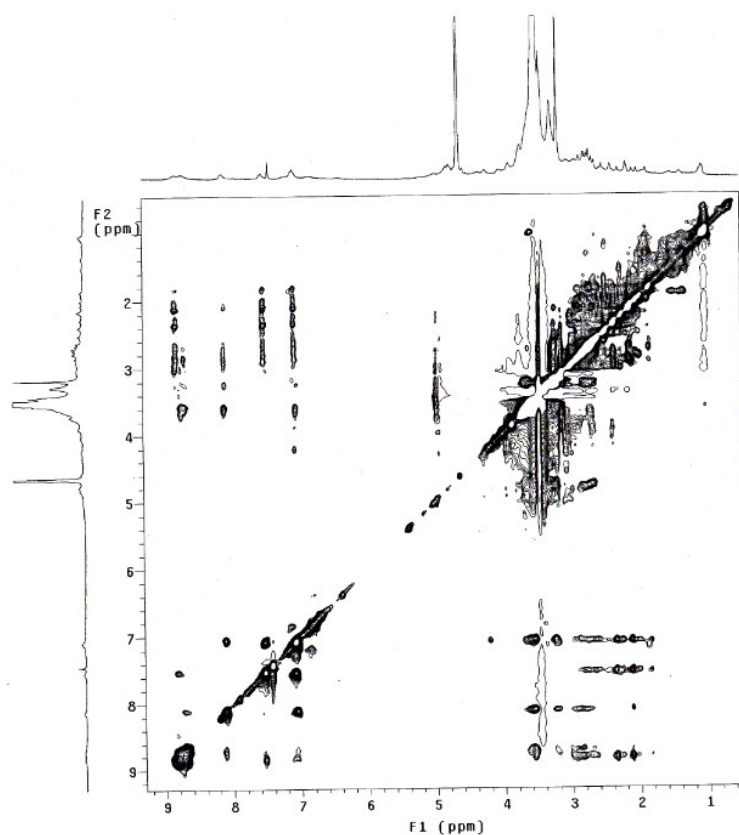
Figure S18. 2D NOESY spectra of 1·TPP in D<sub>2</sub>O at 25 °C.

### 3. Formation of SBPP 1·Mn(II)-TPP.

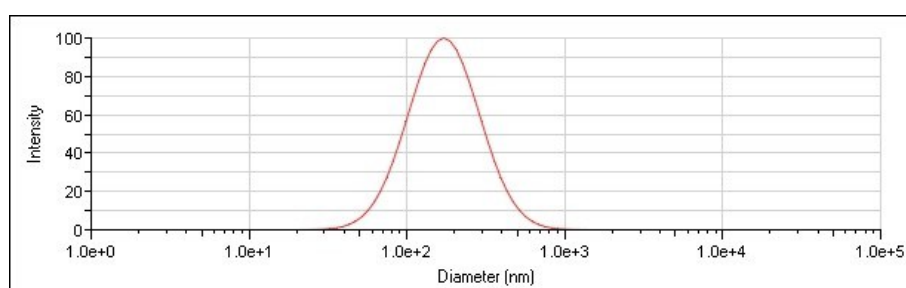


**Figure S19.** The time decay curve of the absorbance of 1·Mn(II)-TPP at 434 nm exposed in air.

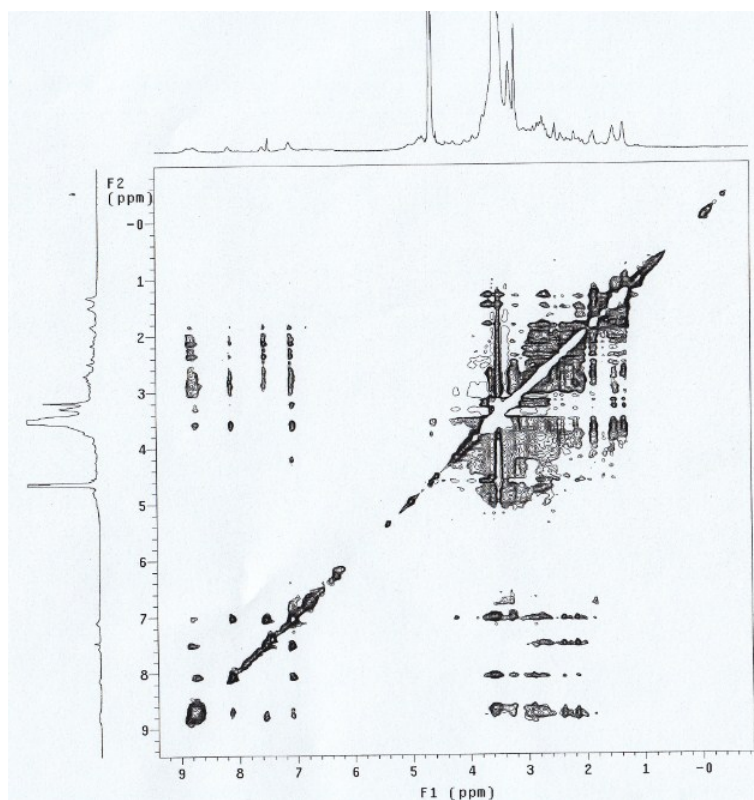
#### 4. Formation of SBP Imaging Agents with Fluorescence Probes and Targeted Agents.



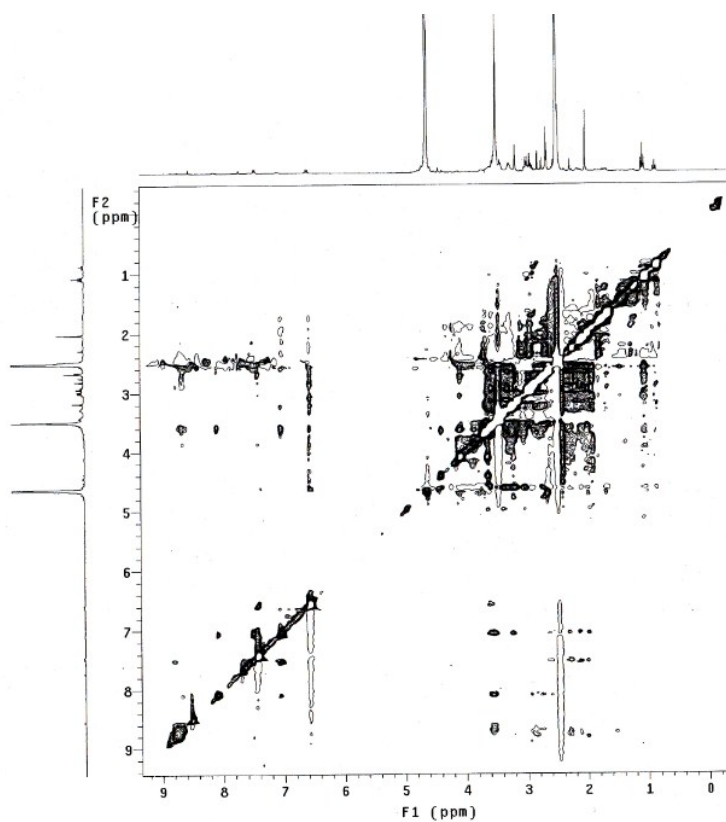
**Figure S20.** 2D NOESY spectra of **1**·TPP·Cy5-AD in D<sub>2</sub>O at 25 °C.



**Figure S21.** DLS for SBPP with the addition of 1-adamantanecarboxylic acid sodium salt.

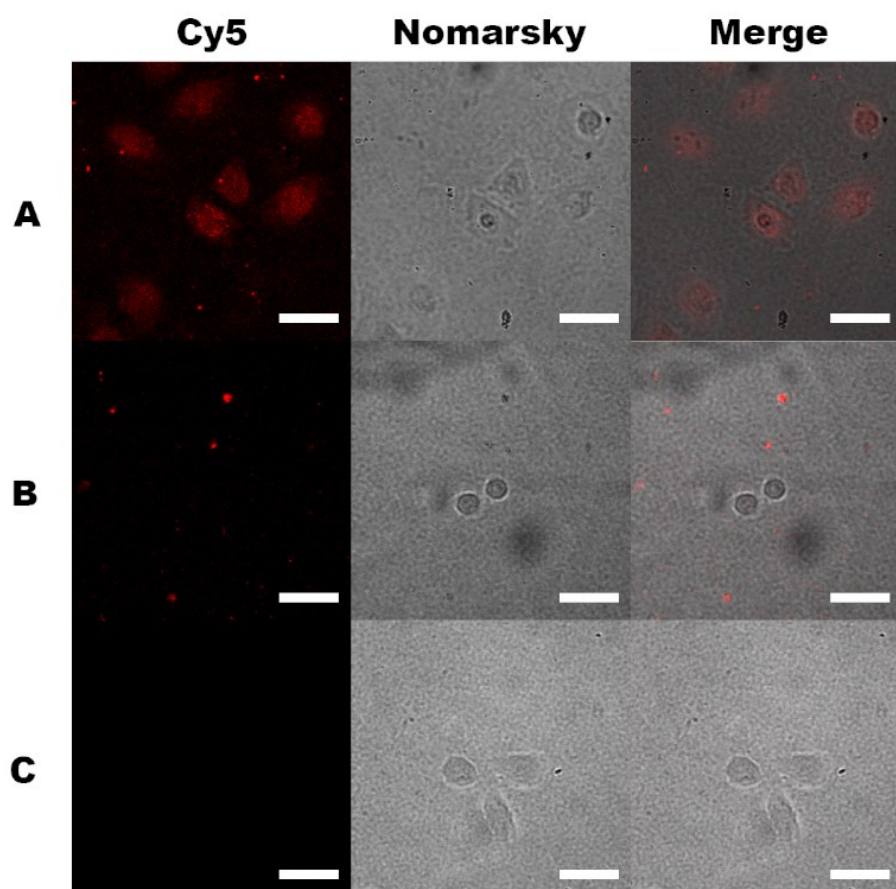


**Figure S22.** 2D NOESY spectra of **1**·TPP·Biotin-AD in D<sub>2</sub>O at 25 °C.



**Figure S23.** 2D NOESY spectra of **1**·TPP·FA-AD in D<sub>2</sub>O at 25 °C.

## 5. Targeted Imaging.



**Figure S24.** Confocal laser scanning microscopy imagings of (A) MCF7 cells in a medium of SBPP-CB (positive); (B) MCF7 cells in an excess biotin-supplemented medium of SBPP-CB (negative); (C) MCF7 cells in a medium of SBPP-C (negative). The scale bar is 15  $\mu\text{m}$ .