Supporting Information

Evidence of Guest Encapsulation within G8 and G10 Dendrimers using NMR Techniques

Naimin Shao[1], Tianjiao Dai[1], Yan Liu[1], Lei Li[1], Yiyun Cheng[1, *]

[1]Shanghai Key Laboratory of Regulatory Biology, School of Life Sciences, East China Normal University, Shanghai, 200241, P.R. China. *E-mail: yycheng@mail.ustc.edu.cn

[2]Shanghai Key Laboratory of Magnetic Resonance, East China Normal University, Shanghai, 200241, P.R. China

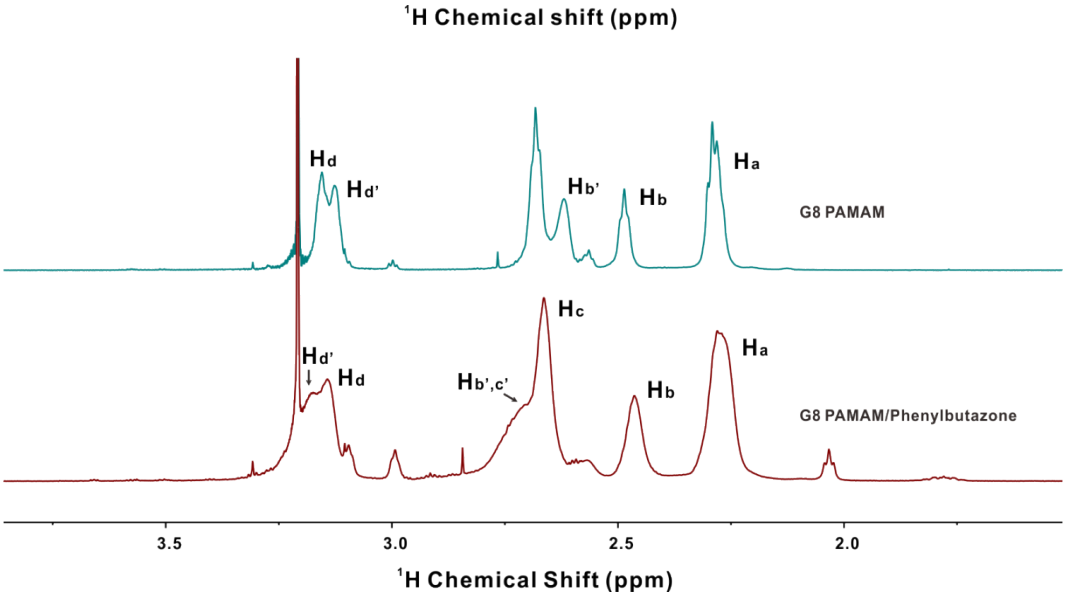


Fig. S1. ^{1}H NMR spectra of G8 PAMAM dendrimer and G8 PAMAM dendrimer/phenylbutazone complex in D_2O. Downfield shifts of peaks ($H_{b'}$ and $H_{d'}$, located on the outmost layer of dendrimer) are observed in the ^{1}H NMR spectrum of G10 PAMAM dendrimer/phenylbutazone complex.

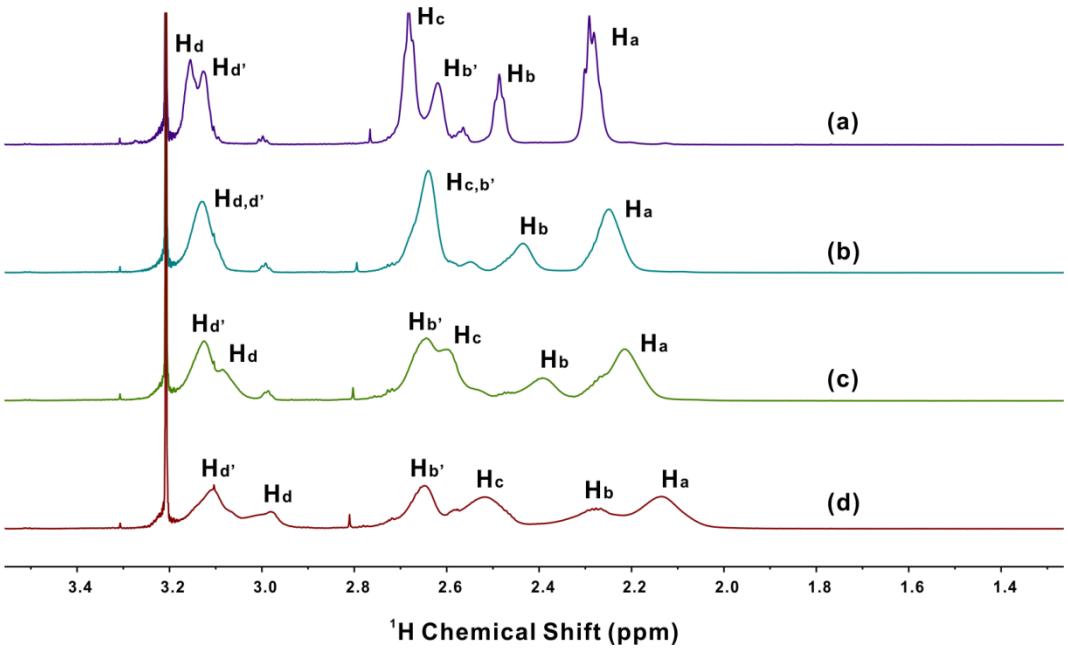


Fig. S2. ^{1}H NMR spectra of G8 PAMAM dendrimer (a) and G8 PAMAM dendrimer/1-pyrenecarboxylic acid complexes (b-d) in D_2O. The molar ratios of 1-pyrenecarboxylic acid and G8 PAMAM dendrimer are 8:1 (b), 16:1 (c) and 32:1 (d), respectively.

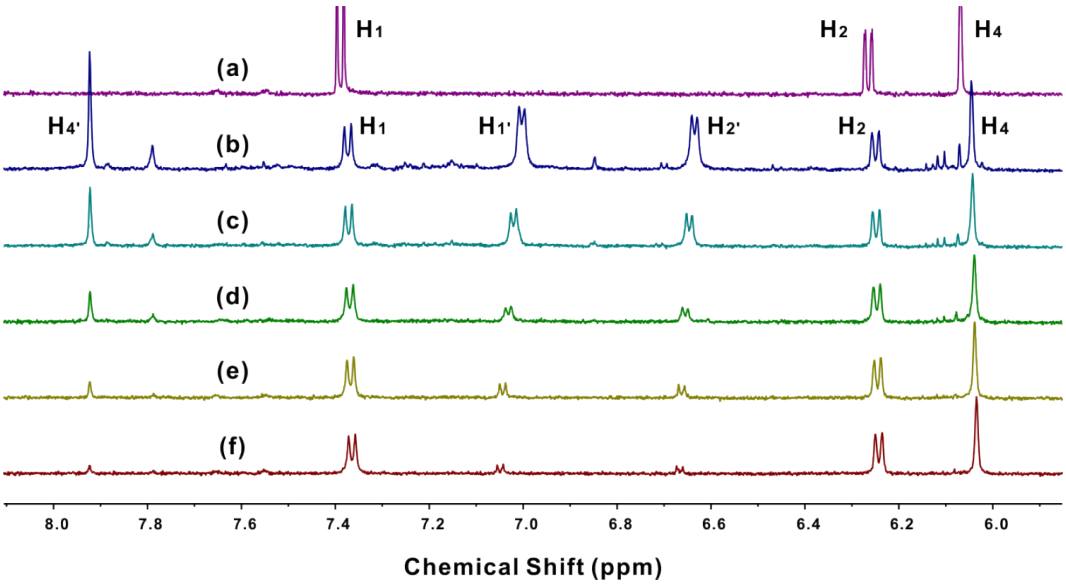
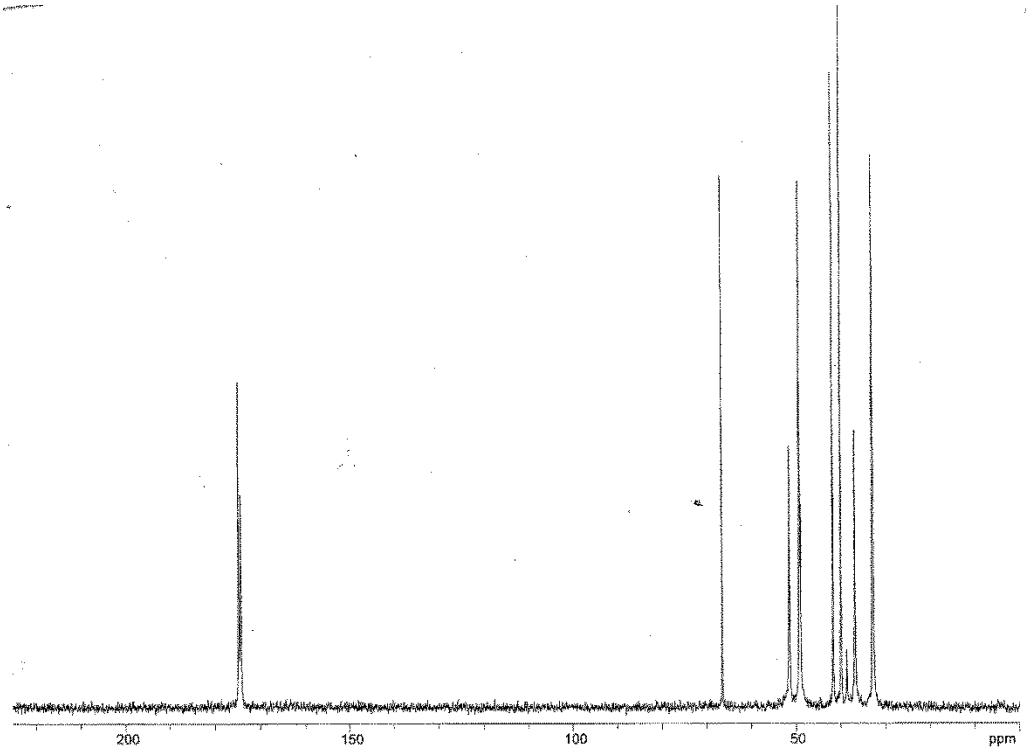
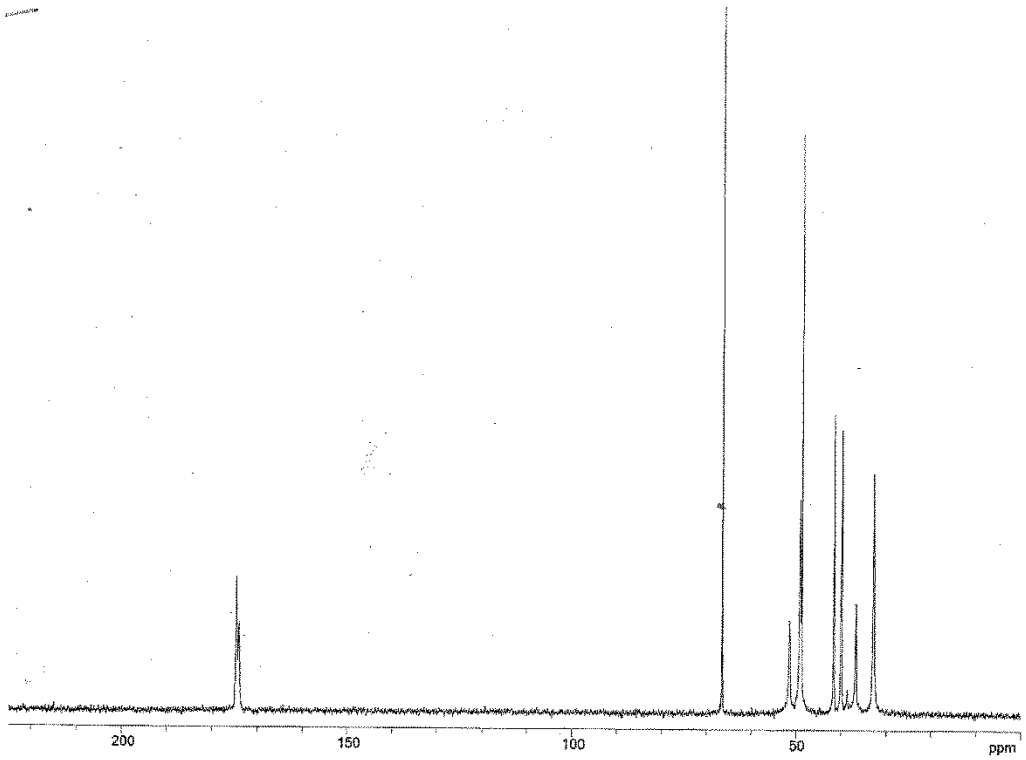


Fig. S3. ^{1}H NMR spectra of dexamethasone sodium phosphate (a) and G8 PAMAM dendrimer/dexamethasone sodium phosphate complexes (b-f) in D_2O. The molar ratios of dexamethasone sodium phosphate and G8 PAMAM dendrimer are 1:1 (b), 2:1 (c), 4:1 (d), 8:1 (e) and 16:1 (f), respectively. The concentration of dexamethasone sodium phosphate in the samples is fixed at 1.37×10^{-4} M.

Note: As shown in Fig. S3, two groups of peaks are observed for protons H_1, H_2 and H_4 on the dexamethasone sodium phosphate (one group for bound dexamethasone sodium phosphate and another group for free dexamethasone sodium phosphate). Since free- and bound-state dexamethasone sodium phosphate molecules are shown in different peaks, we can conclude that the dexamethasone sodium phosphate molecules in the complexes are in slow exchange between free- and bound-states.



(a)



(b)

Fig. S4. ^{13}C NMR analysis of G8 (a) and G10 (b) PAMAM dendrimers. The samples were measured in D_2O at 100 MHz.

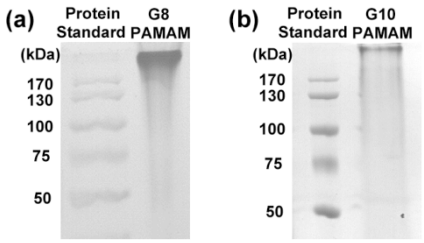


Fig. S5. Polyacrylamide gel electrophoresis analysis of G8 (a) and G10 (b) PAMAM dendrimers. The electrophoresis experiments were conducted according to a procedure described elsewhere. 8% polyacrylamide gels were used and the samples treated with 3% SDS were run at 120 V. The gels were stained with Coomassie Brilliant Blue solution, and destained with 10% methanol and 10% acetic acid in water.