

Antibacterial Activity of Nitric Oxide-Releasing Hyperbranched Polyamidoamines

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Supporting Information Content:

Figure S1. ^1H -NMR spectra of PAMAM and PO-PAMAM scaffolds.

Figure S2. ^{13}C NMR spectra of h-PAMAM.

Figure S3. FTIR spectra of h-PAMAM.

Figure S4. Representative UV-vis spectra and FTIR spectra of *N*-diazoniumdiolate NO donor-modified PAMAM scaffold and PAMAM scaffold.

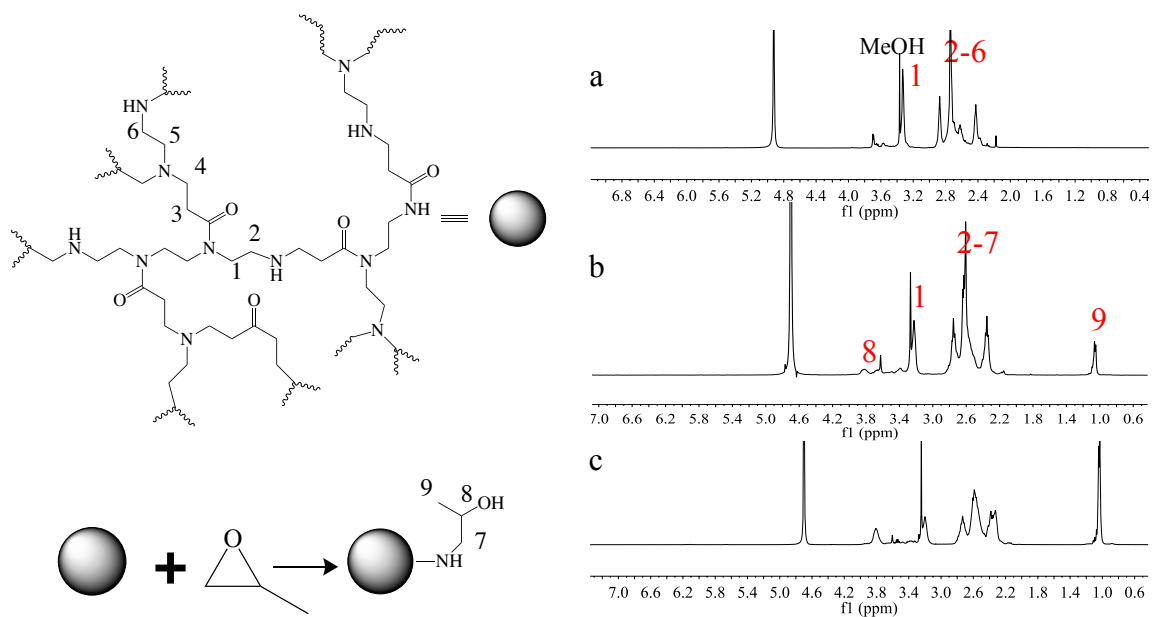


Figure S1. ^1H NMR spectra for: (a) h-PAMAM; (b) h-PAMAM-PO-1; (c) h-PAMAM-PO-2.

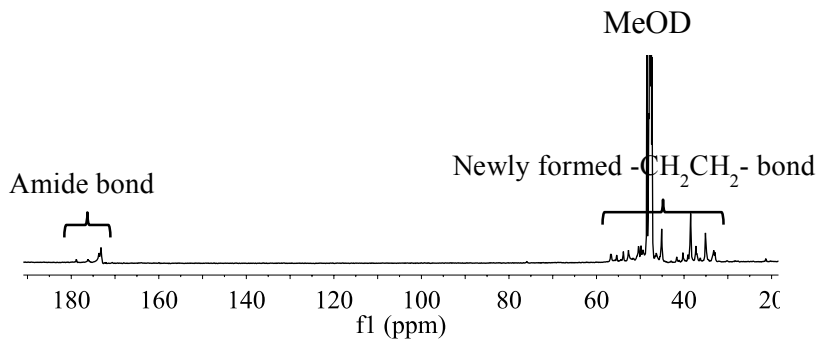


Figure S2. ^{13}C NMR spectra of h-PAMAM.

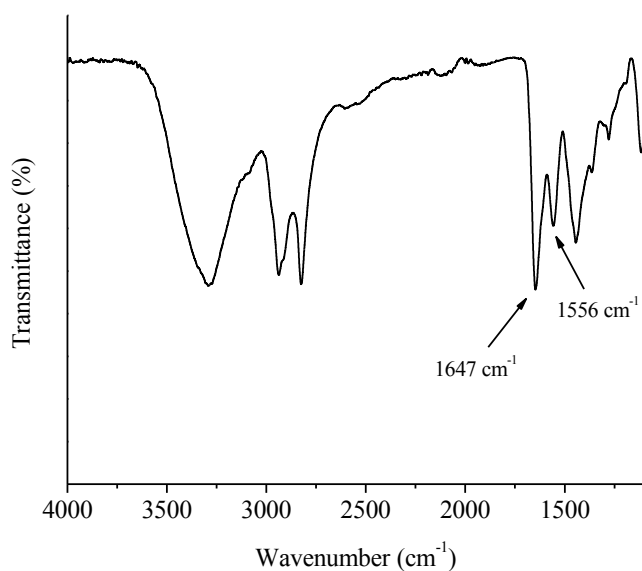


Figure S3. FTIR spectra of h-PAMAM.

^1H NMR showed the appearance of broad peak at 2.22 to 2.90 ppm, along with the disappearance of peaks at 5.80 ppm to 6.60 ppm, indicating the consumption of vinyl groups from methyl acrylate during the reaction. ^{13}C NMR provided the evidence for the formation of amide bond (170-180 ppm) and $-\text{CH}_2\text{CH}_2-$ bond (30-60 ppm) in different chemical environment, and confirmed the disappearance of the vinyl groups (120-140 ppm). The FTIR spectrum showed strong peaks at 1647 cm^{-1} and 1556 cm^{-1} that assigned to the amide bond, further confirming the success in synthesizing h-PAMAM.

By postulating that there is 2.5 active amino groups per monomer, the conversions of total amino groups (both primary and secondary amines) were estimated to be $\sim 11\%$ and $\sim 49\%$ for h-PAMAM-PO-1 and h-PAMAM-PO-2, respectively, using the integration ratio of protons at 3.82 ppm to 2.2-3.60 ppm from ^1H NMR.^{1,2}

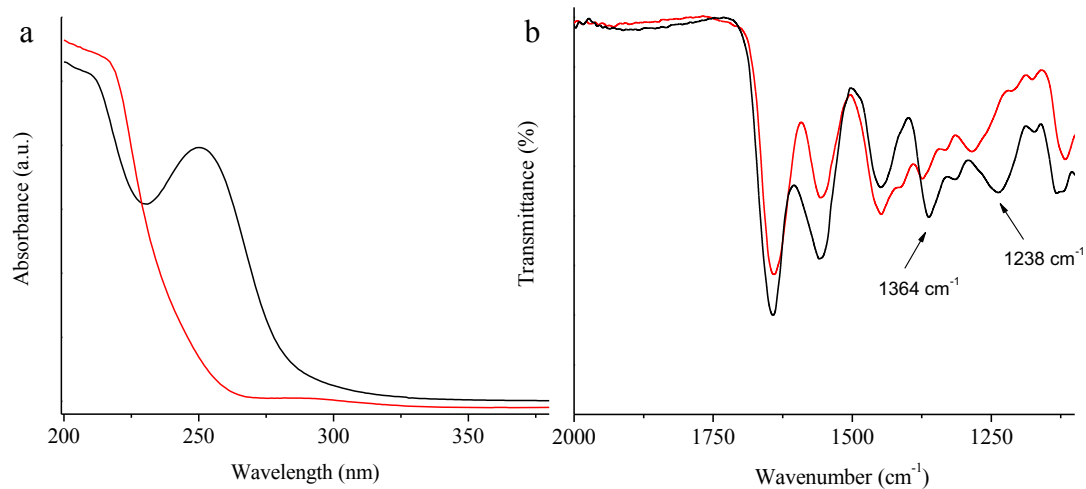


Figure S4. a) Representative UV-vis spectra, and b) FTIR spectra for: h-PAMAM-PO-2/NO (black); h-PAMAM-PO-2 (red).

- (1) Wang, X., He, Y., Wu, J., Gao, C., and Xu, Y. (2009) Synthesis and evaluation of phenylalanine-modified hyperbranched poly (amido amine) s as promising gene carriers. *Biomacromolecules* 11, 245-251.
- (2) Liu, C., Gao, C., and Yan, D. (2006) Synergistic supramolecular encapsulation of amphiphilic hyperbranched polymer to dyes. *Macromolecules* 39, 8102-8111.