

## *Supporting Information for*

### **Spontaneous Formation of Functionalized Dendrimer-Stabilized Gold Nanoparticles**

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1. Photographs of the Au particle suspension prepared using preformed G5.NHAc dendrimers as stabilizers.
2. TEM image, size distribution histogram, and photograph of the suspension of  $\{(Au^0)_7\text{-G5.NGlyOH}\}$  DSNPs prepared in the presence of free glycidol molecules.
3.  $^1\text{H}$  NMR spectra of G5.NH<sub>2</sub> and G5.NHAc dendrimers.
4.  $^1\text{H}$  NMR spectra of G5.NHAc-AF594 dendrimers and  $\{(Au^0)_{10}\text{-G5.NHAc-AF594}\}$  DSNPs.
5. MALDI-TOF mass spectrum of G5.NHAc-AF594 dendrimers.
6. Photographs of the aqueous suspensions of G5.NHAc-AF594 dendrimers and  $\{(Au^0)_{10}\text{-G5.NHAc-AF594}\}$  DSNPs.

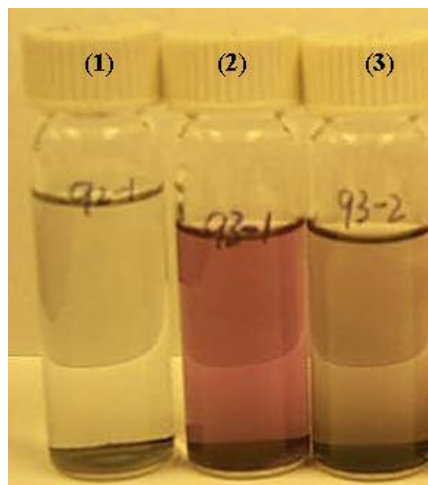


Figure S1 Photograph of Au NP suspensions prepared using preformed G5.NHAc dendrimers as stabilizers: (1) simply mixing G5.NHAc dendrimers with HAuCl<sub>4</sub>; (2) the mixture of G5.NHAc dendrimers and HAuCl<sub>4</sub> was added with triethylamine; (3) the mixture of G5.NHAc dendrimers, HAuCl<sub>4</sub>, and triethylamine was added with acetic anhydride.

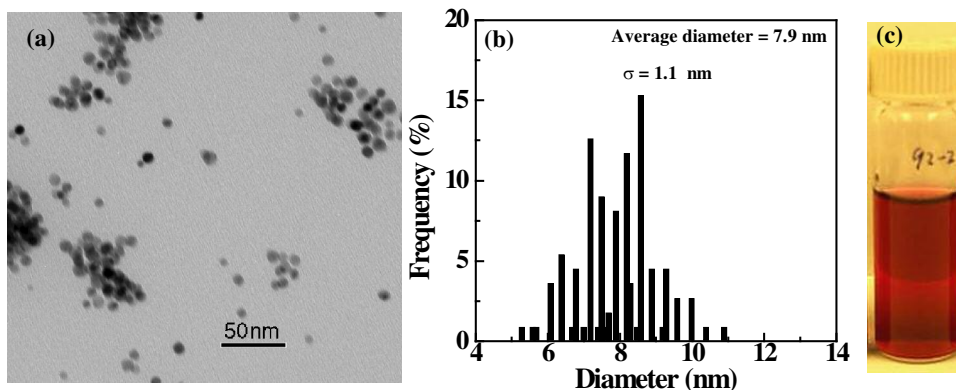


Figure S2 TEM image (a), size distribution histogram (b), and photograph (c) of the suspension of  $\{(Au^0)_7\text{-G5.NGlyOH}\}$  DSNPs prepared in the presence of free glycidol molecules.

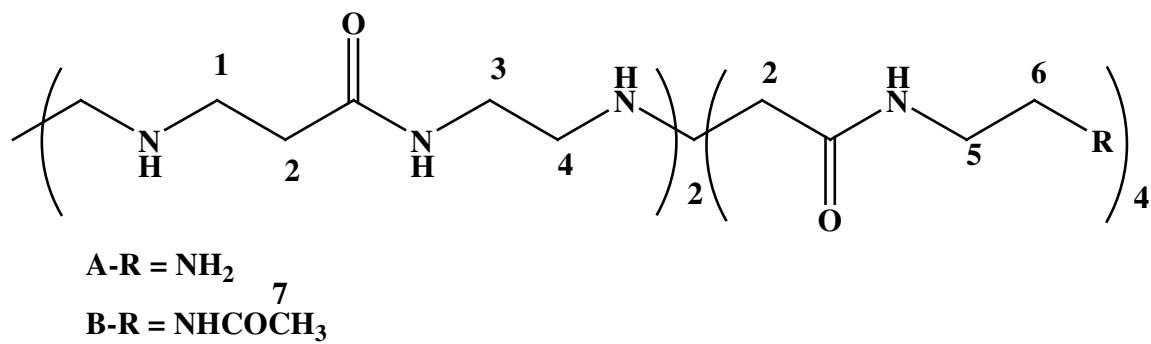
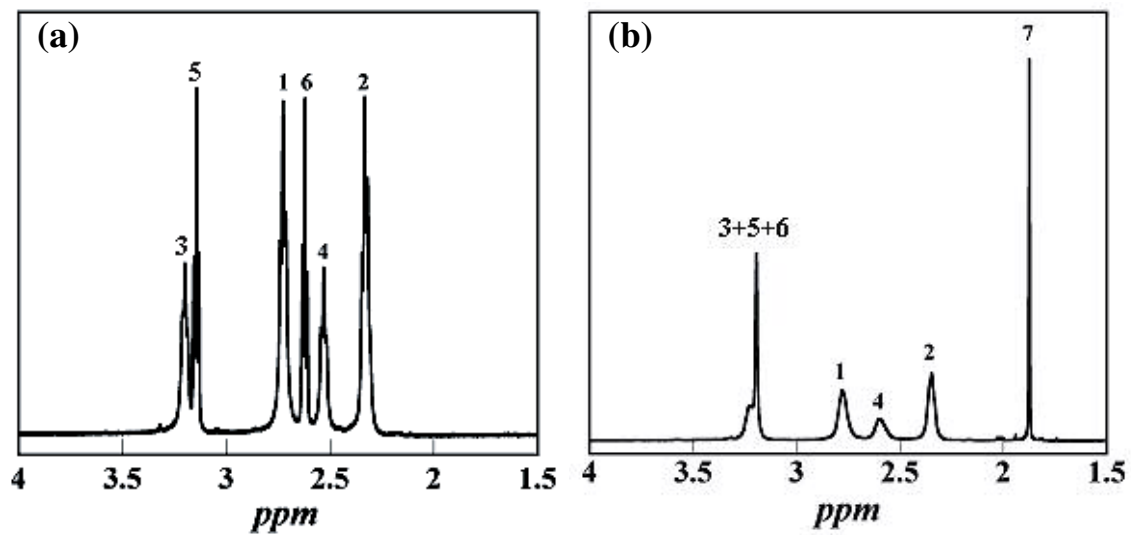


Figure S3.  $^1\text{H}$  NMR spectra of G5.NH<sub>2</sub> (a) and G5.NHAc (b) dendrimers.

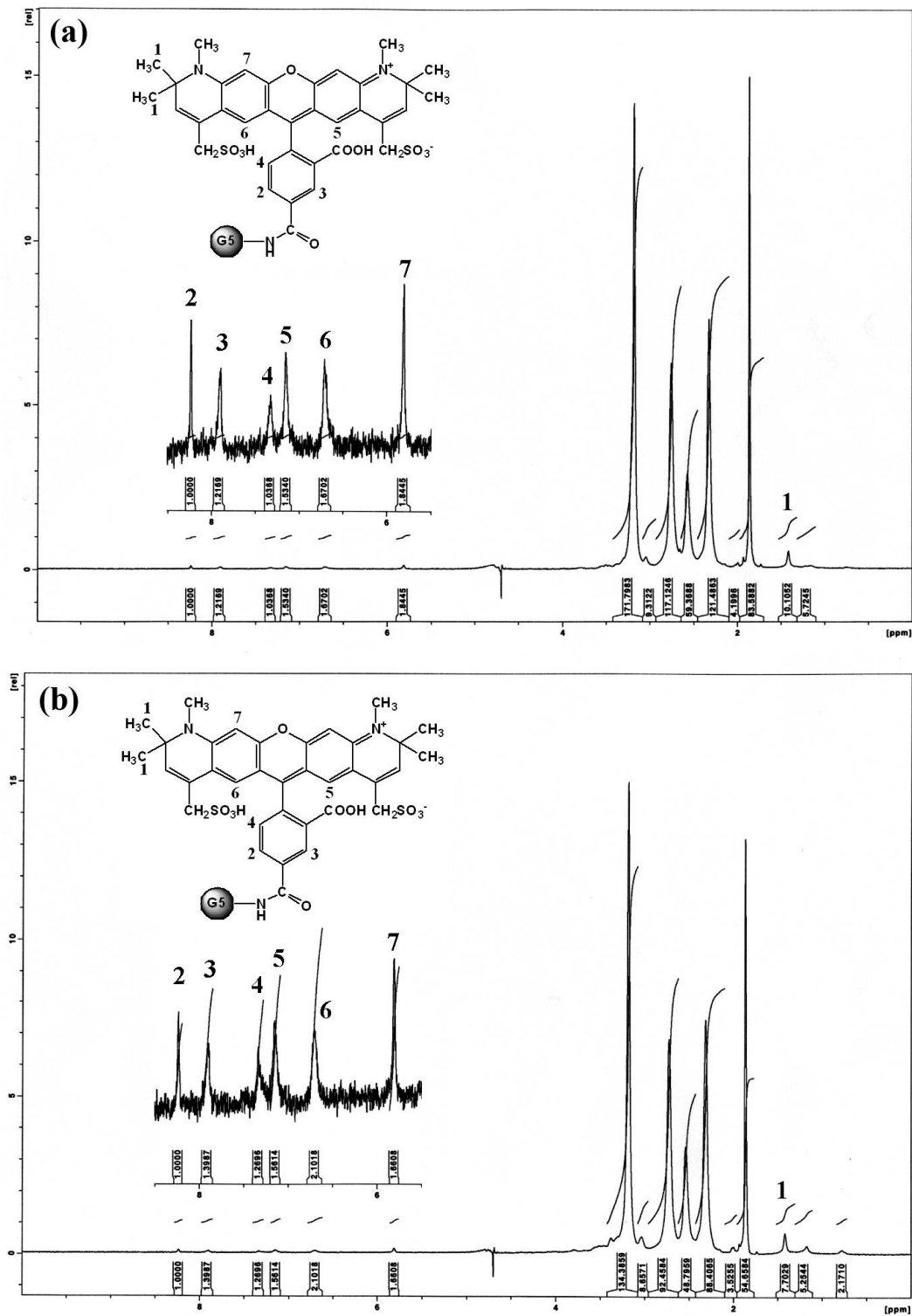


Figure S4. <sup>1</sup>H NMR spectra of G5.NHAc-AF594 dendrimers (a) and {(Au<sup>0</sup>)<sub>10</sub>-G5.NHAc-AF594} DSNPs (b).

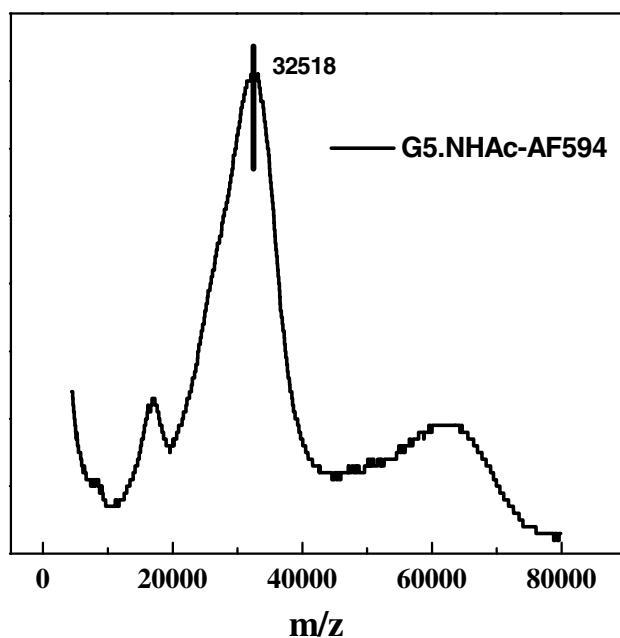


Figure S5. MALDI-TOF mass spectrum of G5.NHAc-AF594 dendrimers.



Figure S6. Photographs of the aqueous suspensions of G5.NHAc-AF594 dendrimers (left) and  $\{(Au^0)_{10}\text{-G5.NHAc-AF594}\}$  DSNPs (right).