

## Supplementary Material

### 1 Supplementary Data

#### General considerations

All reactions were carried out under inert atmosphere and solvents were purified from appropriate drying agents when necessary. Unless otherwise stated, reagents were obtained from commercial sources and used as received. Dendron HSG<sub>1</sub>(S-NMe<sub>3</sub>Cl)<sub>2</sub> was synthesized as published.<sup>1</sup>

#### Synthesis of nanoparticles

**AgNP@(SG<sub>1</sub>(S-NMe<sub>3</sub>Cl)<sub>2</sub>) (Dend-AgNP).** These AgNP were synthesized as described elsewhere.<sup>2</sup> An aqueous solution of compound HSG<sub>1</sub>(S-NMe<sub>3</sub>Cl)<sub>4</sub> (**1**) (40 mL, 0.5 mmol, 12.5 mM) as added dropwise to an aqueous solution of AgNO<sub>3</sub> (16.3 mL, 0.5 mmol, 30 mM) w. NaBH<sub>4</sub> in water (13.5 mL, 2.7 mmol, 200 mM) was next added dropwise, and the mixture stirred for 4 h. Nanoparticles were purified by dialysis (MWCO 10.000) yielding **Dend-AgNP** (108 mg), which were stored in deionized water at 4 °C.

Data for **Dend-AgNP**: NMR (D<sub>2</sub>O): <sup>1</sup>H NMR: δ 0.06 (SiCH<sub>3</sub>), 0.60 (SCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Si), 0.90 (SiCH<sub>2</sub>CH<sub>2</sub>S), 1.40 (SCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Si), 1.78 (SCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Si), 2.74 (SiCH<sub>2</sub>CH<sub>2</sub>S), 2.97 (SCH<sub>2</sub>CH<sub>2</sub>N), 3.10 (NCH<sub>3</sub>), 3.50 (SCH<sub>2</sub>CH<sub>2</sub>N). Ag/(l) reactant molar ratio = 1:1. TGA (%): Ag, 46.4; (l), 53.6. Calc. molar ratio Ag/(l) = 3.99:1 in nanoparticle. SPR (UV-Vis): 447.8 nm. Zeta Potential: +53.4. DLS (Z-average d.nm) = 11.70 nm. Mean diameter of silver core (TEM): D = 1.70 nm. Number of silver atoms: N<sub>Ag</sub> = 143; number of dendrons N<sub>d</sub> = 36. Molecular formula: Ag<sub>143</sub>(C<sub>19</sub>H<sub>45</sub>Cl<sub>2</sub>N<sub>2</sub>S<sub>3</sub>Si)<sub>36</sub>. Average Mw = 64733309.85 g mol<sup>-1</sup>.

**AgNP@(SG<sub>1</sub>(S-NMe<sub>3</sub>Cl)<sub>2</sub>@PEG (1/1) (PEG-Dend-AgNP).** These AgNP were synthesized as described elsewhere.<sup>3</sup> A mix of aqueous solution (24 mL, 12.5 mM) of HSG<sub>1</sub>(S-NMe<sub>3</sub>Cl)<sub>2</sub> (0.15 mmol,

74.6 mg) and HS-PEG (Mn = 800, 0.15 mmol, 120 mg) was added dropwise to an aqueous solution of AgNO<sub>3</sub> (10 mL, 30 mM, 0.3 mmol, 50.9 mg). Afterwards, a solution of NaBH<sub>4</sub> in water (7.5 mL, 200 mM, 1.5 mmol, 56.7 mg) was added dropwise and the mixture was stirred for 4 h at room temperature. Nanoparticles thus obtained were purified by dialysis (MWCO 10 kDa) yielding **PEG-Dend-AgNP** (74.7 mg), which were stored in deionized water at 4 °C.

Data for **PEG-Dend-AgNP**: NMR (D<sub>2</sub>O): <sup>1</sup>H NMR: δ 0.17 (SiCH<sub>3</sub>), 0.73 (SCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Si), 1.03 (SiCH<sub>2</sub>CH<sub>2</sub>S), 1.53 (SCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Si), 1.91 (SCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Si), 2.83 (SiCH<sub>2</sub>CH<sub>2</sub>S), 3.11 (SCH<sub>2</sub>CH<sub>2</sub>N), 3.22 (NCH<sub>3</sub>), 3.41 (OMe, PEG), 3.66 (SCH<sub>2</sub>CH<sub>2</sub>N), 3.73 (OCH<sub>2</sub>CH<sub>2</sub>O, PEG). Reactant molar ratio HSG<sub>1</sub>(S-NMe<sub>3</sub>Cl)<sub>2</sub>/HS-PEG molar ratio= 1/1. Calc. molar ratio (NMR) HSG<sub>1</sub>(S-NMe<sub>3</sub>Cl)<sub>2</sub>/HS-PEG = 1/2.4. TGA (%): Ag, 35.7; L, 64.3. SPR (UV-vis): 442 nm. Zeta Potential (mV): 22.5. DLS (nm): 21.7. Mean diameter of silver core (TEM) = 4.1 nm.