

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 HSG₁(S-NMe₃Cl)₂ was synthesized as published.¹

Synthesis of nanoparticles

AgNP@(SG₁(S-NMe₃Cl)₂) (Dend-AgNP). These AgNP were synthesized as described elsewhere.² An aqueous solution of compound HSG₁(S-NMe₃Cl)₄ (**1**) (40 mL, 0.5 mmol, 12.5 mM) as added dropwise to an aqueous solution of AgNO₃ (16.3 mL, 0.5 mmol, 30 mM) w. NaBH₄ 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 (D₂O): ¹H NMR: δ 0.06 (SiCH₃), 0.60 (SCH₂CH₂CH₂CH₂Si), 0.90 (SiCH₂CH₂S), 1.40 (SCH₂CH₂CH₂CH₂Si), 1.78 (SCH₂CH₂CH₂CH₂Si), 2.74 (SiCH₂CH₂S), 2.97 (SCH₂CH₂N), 3.10 (NCH₃), 3.50 (SCH₂CH₂N). 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_{Ag} = 143; number of dendrons N_d = 36. Molecular formula: Ag₁₄₃(C₁₉H₄₅Cl₂N₂S₃Si)₃₆. Average Mw = 64733309.85 gmol⁻¹.

AgNP@(SG₁(S-NMe₃Cl)₂@PEG (1/1) (PEG-Dend-AgNP). These AgNP were synthesized as described elsewhere.³ A mix of aqueous solution (24 mL, 12.5 mM) of HSG₁(S-NMe₃Cl)₂ (0.15 mmol,

74.6 mg) and HS-PEG (Mn = 800, 0.15 mmol, 120 mg) was added dropwise to an aqueous solution of AgNO₃ (10 mL, 30 mM, 0.3 mmol, 50.9 mg). Afterwards, a solution of NaBH₄ 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 (D₂O): ¹H NMR: δ 0.17 (SiCH₃), 0.73 (SCH₂CH₂CH₂CH₂Si), 1.03 (SiCH₂CH₂S), 1.53 (SCH₂CH₂CH₂CH₂Si), 1.91 (SCH₂CH₂CH₂CH₂Si), 2.83 (SiCH₂CH₂S), 3.11 (SCH₂CH₂N), 3.22 (NCH₃), 3.41 (OMe, PEG), 3.66 (SCH₂CH₂N), 3.73 (OCH₂CH₂O, PEG). Reactant molar ratio HSG₁(S-NMe₃Cl)₂/HS-PEG molar ratio= 1/1. Calc. molar ratio (NMR) HSG₁(S-NMe₃Cl)₂/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.