

SUPPLEMENTARY MATERIAL

Stability test of monothiol oligonucleotide–Au nanoparticle conjugates with different oligonucleotide strand surface coverage

Two 16 nm Au nanoparticle/monothiol oligonucleotide conjugates, conjugate 1 and conjugate 2, were synthesized as described previously (19). Conjugate 1 bears oligonucleotide sequence 5'-TCT-CAA-CTC-GTA-A₂₀-(CH₂)₃-SH-3' and conjugate 2 bears oligonucleotide sequence 5'-TCT-CAA-CTC-GTA-T₂₀-(CH₂)₃-SH-3'. As shown previously (19), the

surface coverage of conjugate 1 is ~110 strands per particle, while the surface coverage of conjugate 2 is ~160 strands per particle. Both conjugates decomposed in DTT solution within 2 min under the experimental conditions described in the manuscript. This is in contrast to the 8~10 h required for trithiol oligonucleotide nanoparticle conjugates (see Figs S1 and 1C). Therefore, we believe the difference in surface coverage is not the principle reason for the differences in the observed conjugate stability.

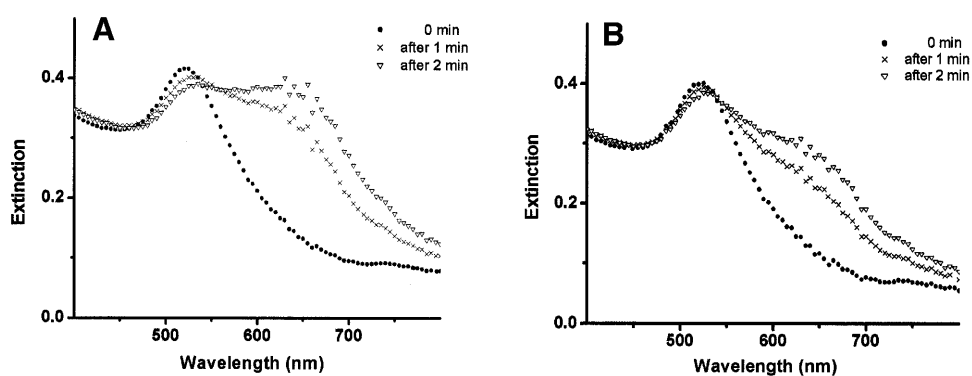


Figure S1. Time evolution of UV-Vis spectra showing the stability of Au nanoparticle/monothiol oligonucleotide conjugates with different oligonucleotide strand coverages, in 10 mM DTT, 0.3 M NaCl solutions at 40°C. (A) Conjugate 1 with ~110 strands per particle, (B) conjugate 2 with ~160 strands per particle.