Supporting Information

Enhancement of *in vitro* Translation by Gold Nanoparticle-DNA Conjugates

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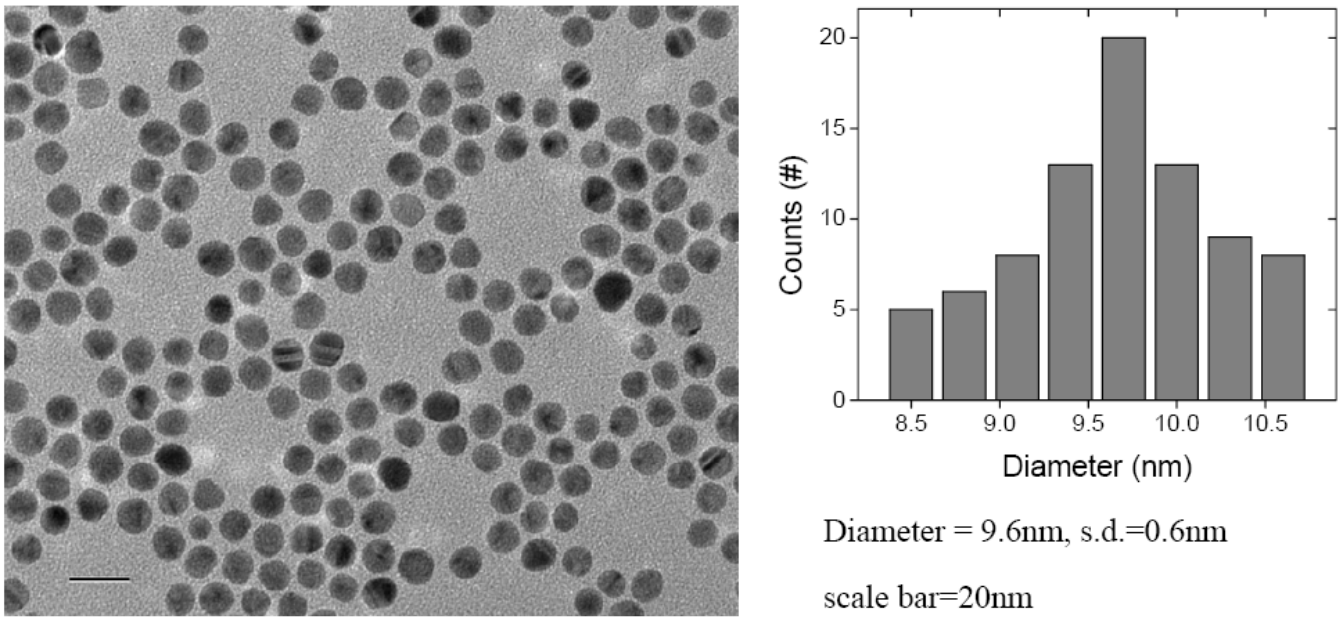

Figure S1. AuNP size distribution.

TEM image of AuNPs (Left, scale bar = 20 nm) and sizing histogram of AuNPs from TEM image (Right).

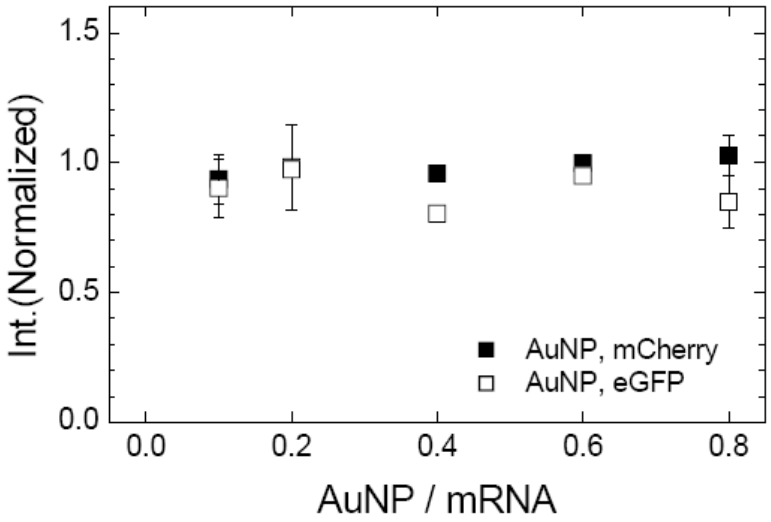

Figure S2. Quenching effect of AuNP.

AuNPs were put into the mixture after eGFP or mCherry was translated. Peak fluorescence intensity was normalized to the fluorescence of eGFP or mCherry solution that does not contain AuNP. Filled squares: mCherry, Open squares: eGFP.

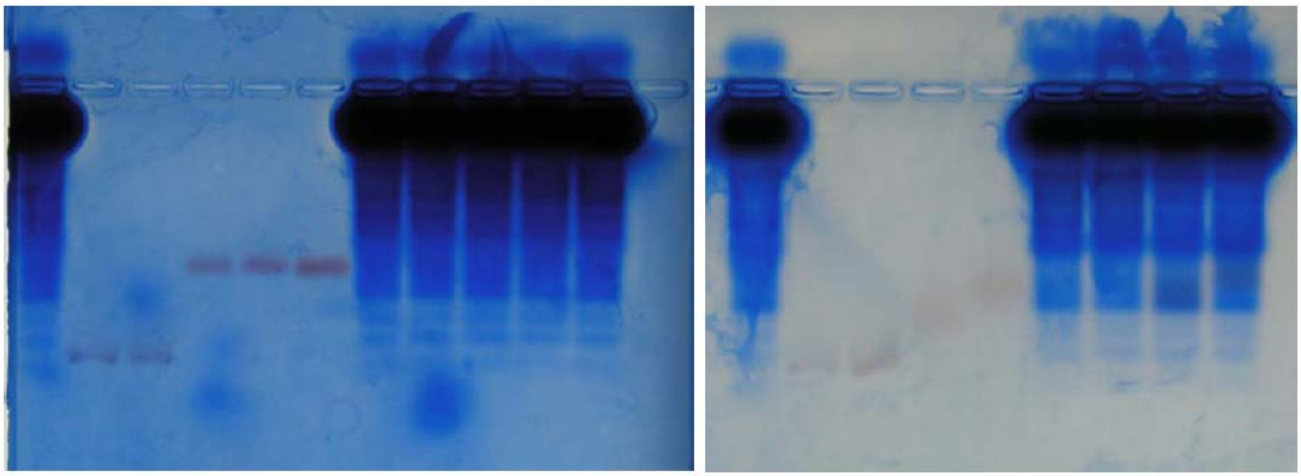

Figure S3. Blue-stained gel of Figure 1f (Left) and Figure 3c (Right).

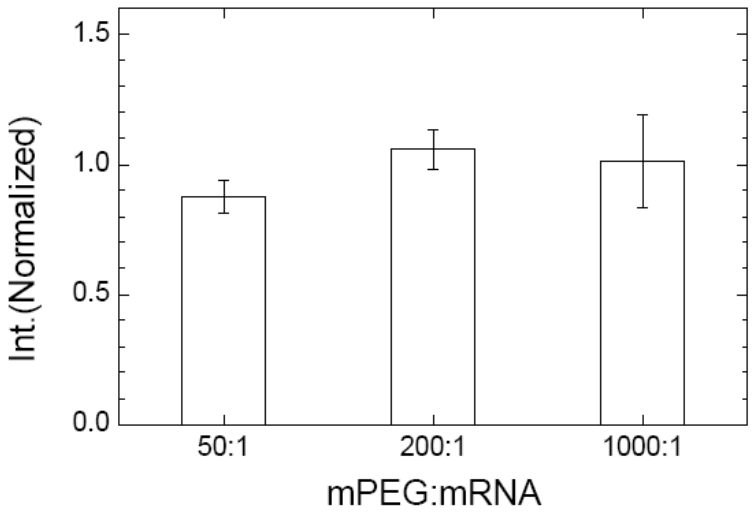

Figure S4. Effect of free mPEG molecules on mCherry translation.

mPEG:mRNA molar ratio varies from 50:1 to 1000:1. Peak fluorescence intensity was normalized to the fluorescence of mCherry solution that does not contain mPEG.

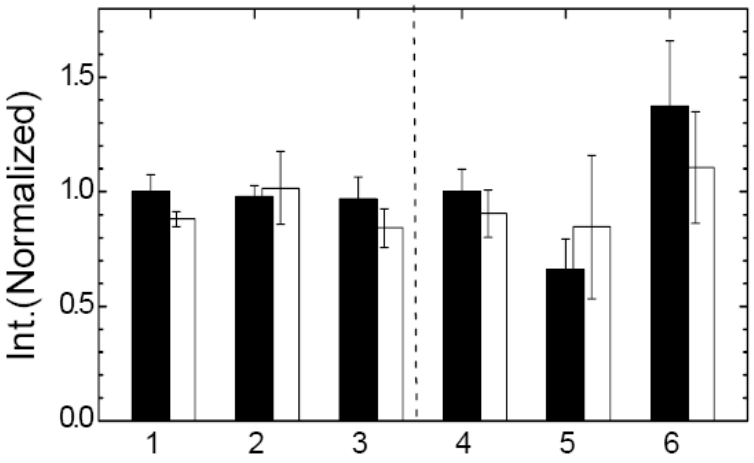

Figure S5. Effect of RNase H on translation with wkDNA.

Normalized peak fluorescence intensity of eGFP and mCherry translated with wkDNA or AuNP-wkDNA. Black columns: normal translation, white columns: translation with RNase H.

Sample 1: eGFP, 2: eGFP with wkDNA (DNA/mRNA=50), 3: eGFP with AuNP-wkDNA (1:59) (AuNP/mRNA=0.4), 4: mCherry, 5: mCherry with wkDNA (DNA/mRNA=50), 6: mCherry with AuNP-wkDNA (1:59) (AuNP/mRNA=0.4).