Supporting Information

Detection of Au Nanoparticles Using Peptide-Modified Si_3N_4 Nanopores

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Contents:

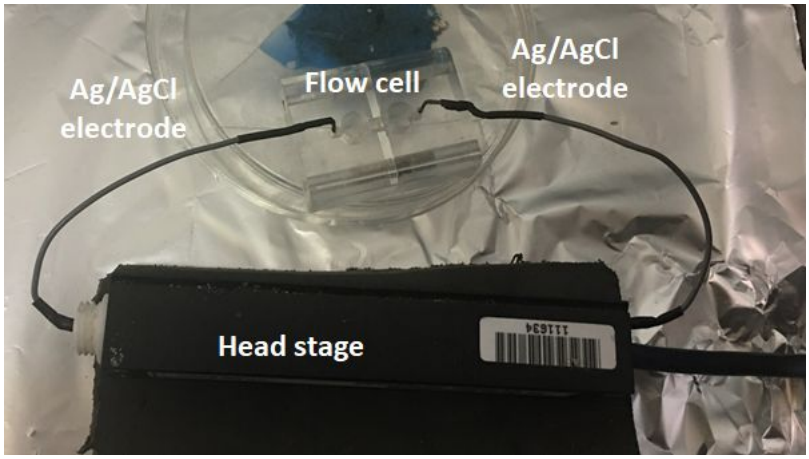

Figure S1: *Head-stage (Axo-patch 200B amplifier) with Ag/AgCl electrodes measuring through flow cell.*

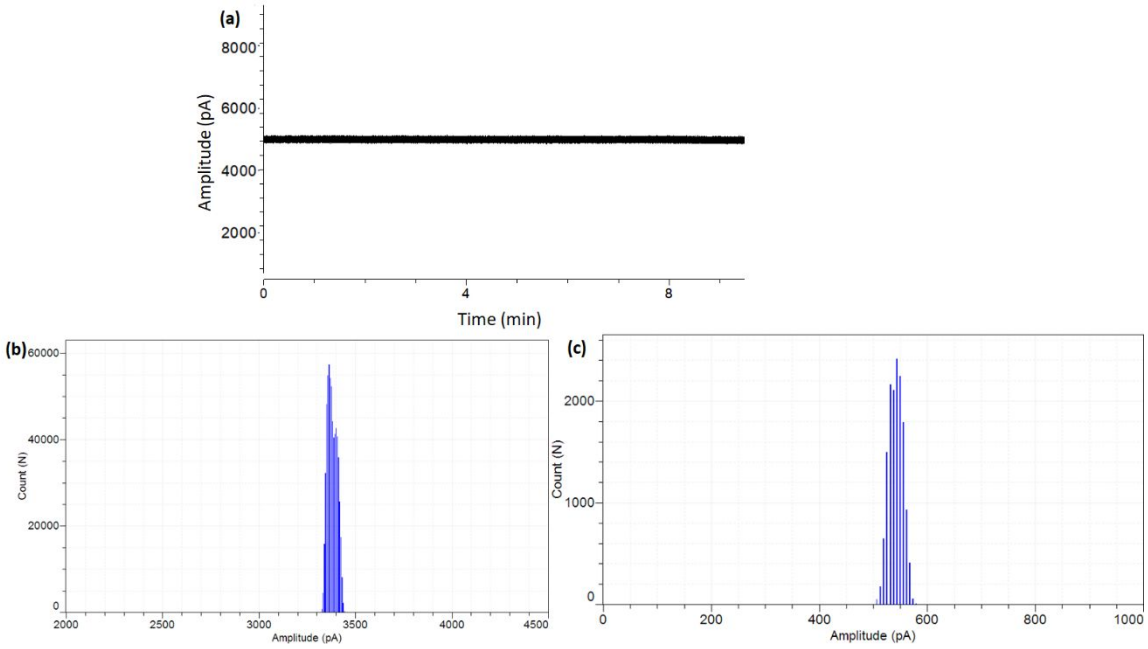

Figure S2: *Current through 12 nm Si_3N_4 pore coated with DOPA-His. (a) Blank current, shows stable signal for 10 minutes. The measurements were performed using 1 M KCl, 10 mM Tris-HCl, 1 mM EDTA and pH 6.0, at 200 mV. (b and c) Current histogram for 12 nm pore. The width of the histograms shows that the background noise level of the current using 1 M KCl (b) and 20 mM (c) KCl salt concentration.*

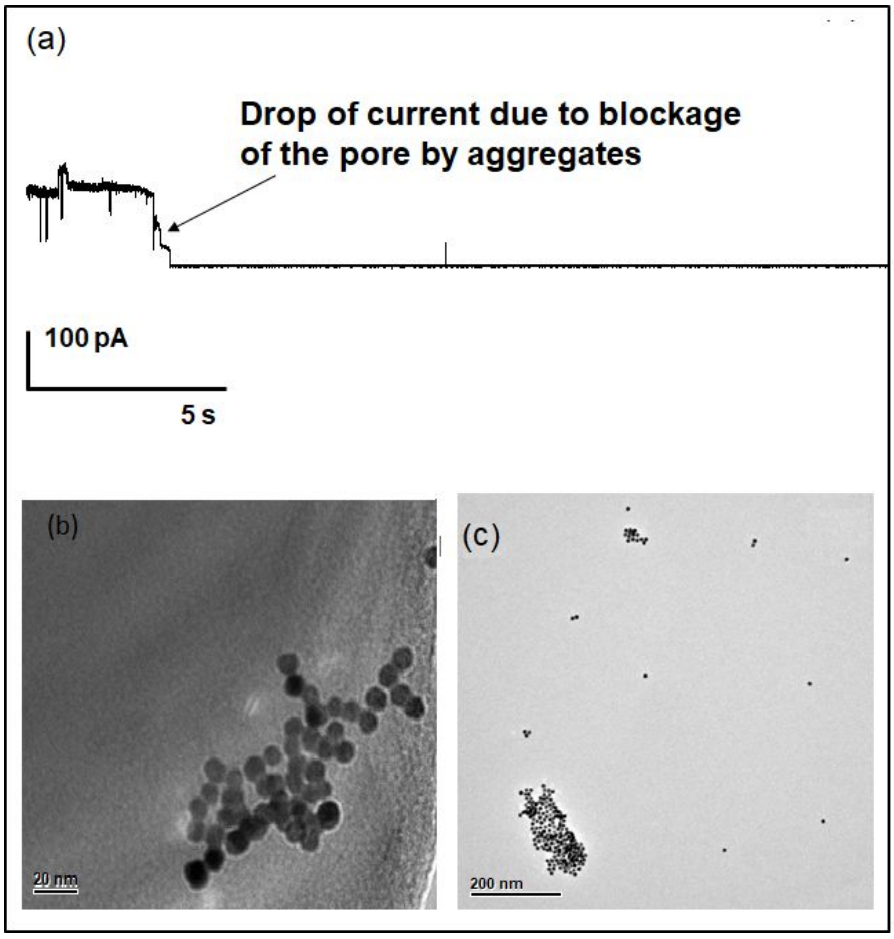

Figure S3: *(a) Current trace shows a drop in current due to possible aggregation of 8 nm GNPs stabilized with BSPP. (b) A TEM image that shows GNPs-BSPP aggregates on the Si_3N_4 membrane (that contains the nanopore) after measurement. (c) A TEM image that shows GNPs-BSPP aggregates in a sample that was taken from the Cis chamber. The measurements were done with 12 nm nanopore at 200 mV, using 20 mM KCl salt solution with pH 6.0.*

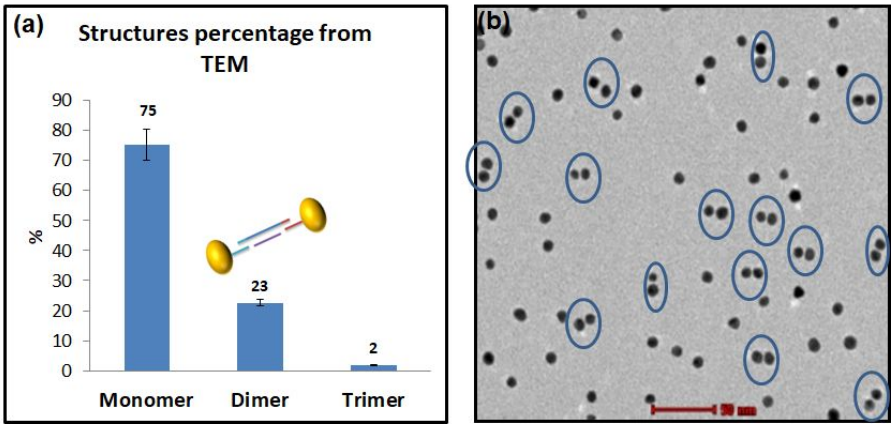

Figure S4: *(a) Surface count of monomers, dimers and aggregates of 8 nm GNPs using TEM. The GNPs were conjugated to two different and non-complementary to each other ssDNA sequences of 26 bases. These GNP-ssDNA conjugates were mixed with 100 bases ssDNA with a complementary of 64 bases that could be hybridized to both GNP-ssDNA strands at its termini. The concentration of each GNP-26 bases ssDNA was 250 nM, and 100 bases ssDNA strands concentration was 100 nM. (b) TEM image that represents the surface distribution of the GNPs mixture. Dimers are marked with blue spheres.*