Supporting Information

Nanofluidic Devices with 8 Pores in Series for Real-Time, Resistive-Pulse Analysis of Hepatitis B Virus Capsid Assembly

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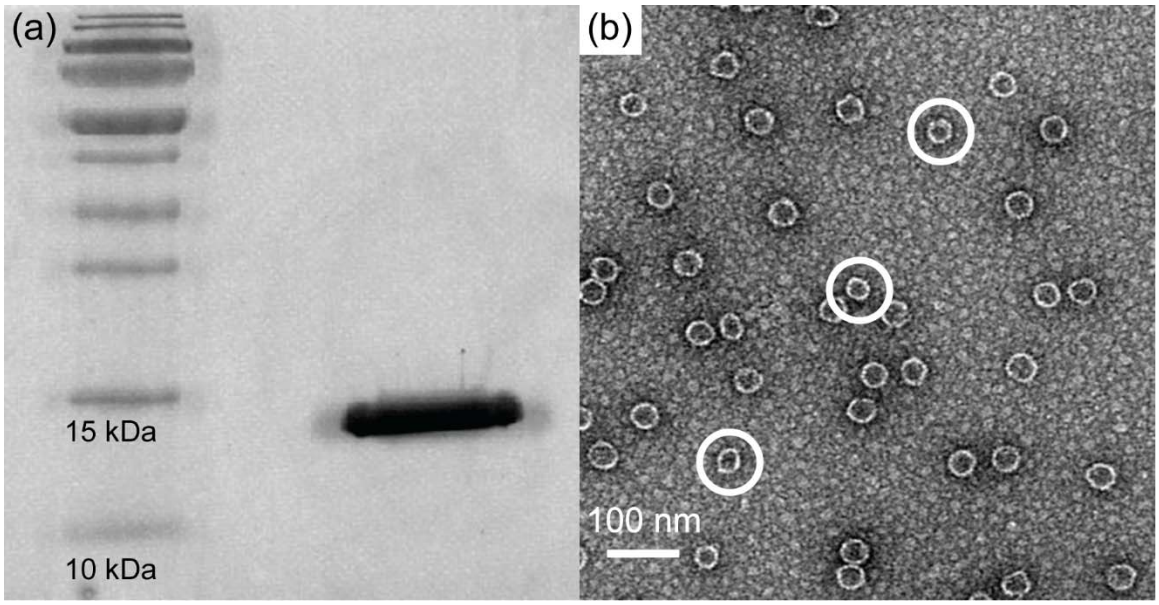

Figure S1. (a) Reducing SDS-PAGE of 6 μg of Cp149, which runs as a 17 kDa monomer under reducing conditions. The single band shows the purity of the monomer. The size standard is the PageRuler Prestained Protein Ladder (Thermo-Fisher). (b) Negative-stained transmission electron microscope (TEM) image of virus capsids assembled from 5 μM Cp149 dimer in 50 mM HEPES with 1 M NaCl. The HBV capsids were stained with 2% uranyl acetate. The primary assembly products are T = 4 capsids, but smaller T = 3 capsids are clearly observed and indicated with white circles.

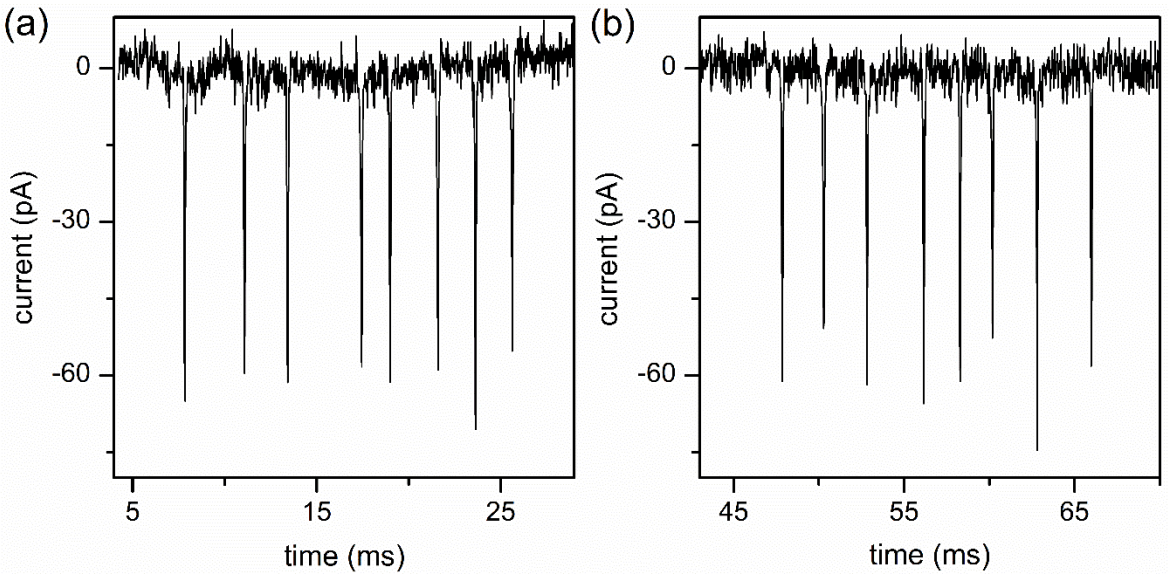

Figure S2. (a)-(b) Pulse sequences from the translocation of single T = 4 capsids through the same 8-pore device. The baseline current (~17 nA) has been subtracted from the signal.

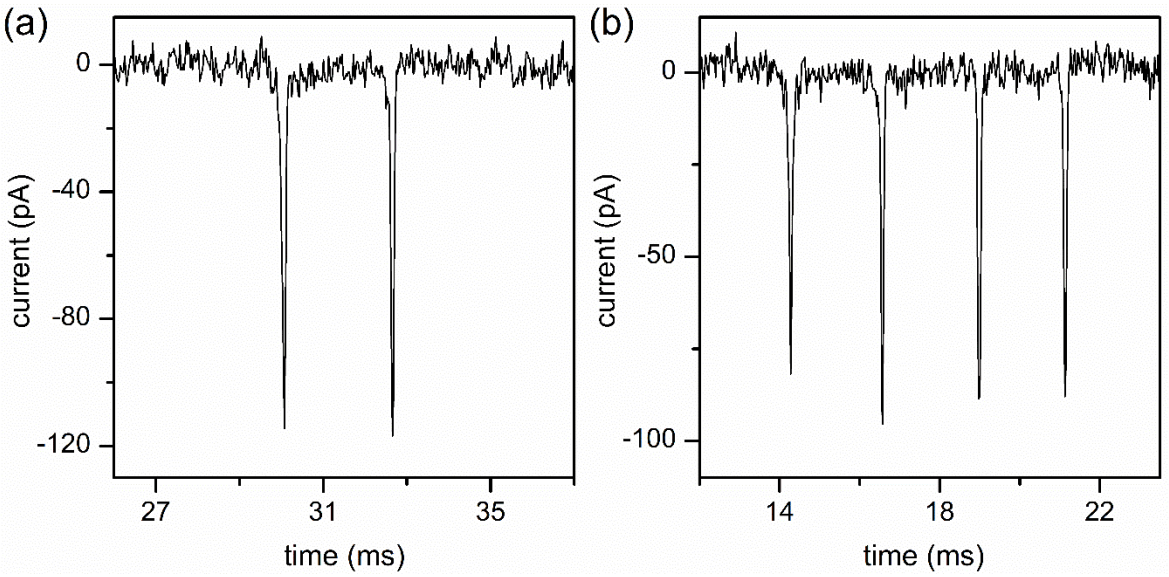

Figure S3. Pulse sequences from the translocation of single T = 4 capsids through (a) 2-pore and (b) 4-pore devices. The baseline current (~17 nA) has been subtracted from the signal.

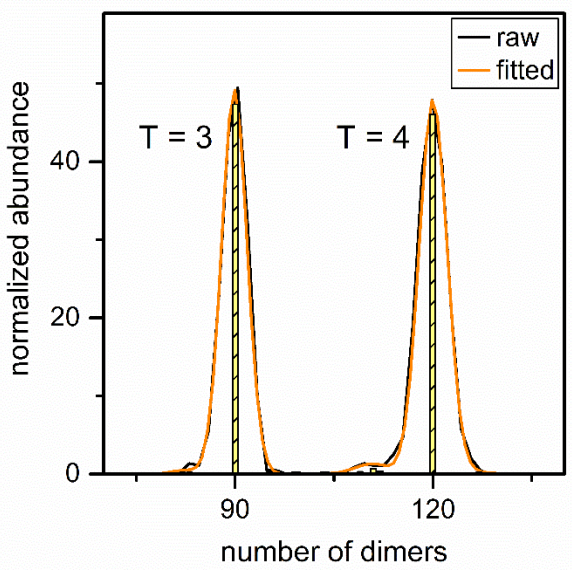

Figure S4. Histogram of number of dimers from a 1:1 mixture of T = 3 and T = 4 HBV capsids measured on an 8-pore device. The raw data (black line) and corresponding fitted curve (orange line) are overlaid. Yellow bars represent the means and amplitudes of the fitted Gaussian distributions. Both the T = 3 and T = 4 capsid distributions were fitted as single distributions.