Reprogramming the Activatable Peptide Display Function of Adeno-Associated Virus Nanoparticles

Supplemental Information

Nicole N. Thadani[1], Christopher Dempsey[1], Julia Zhao[1,3], Sonya M. Vasquez[1] and Junghae Suh[1,2]

[1]Department of Bioengineering, Rice University
[2]Systems, Synthetic and Physical Biology, Rice University
[3]Current address: Department of Chemistry, Massachusetts Institute of Technology

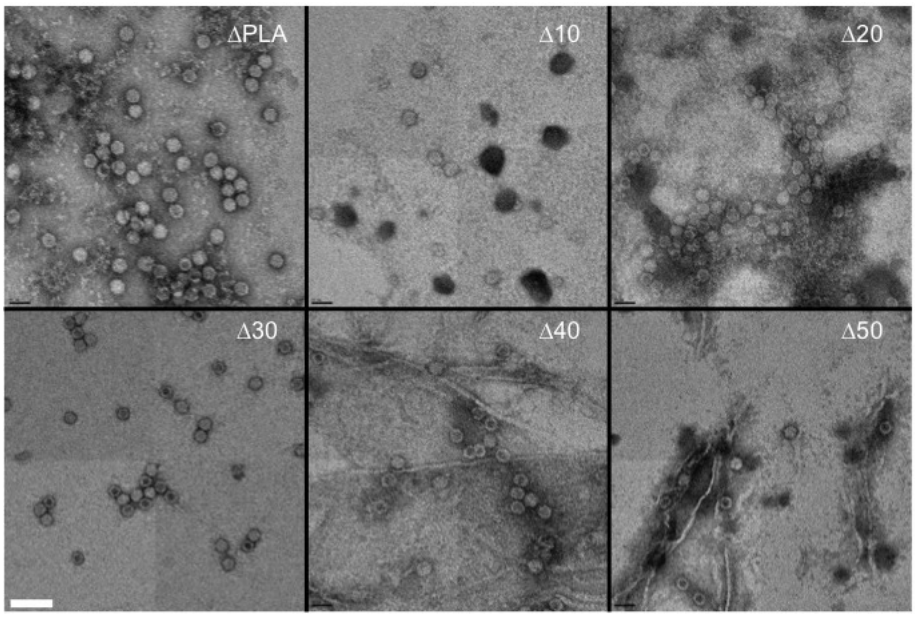

Figure S1: TEM images of homomeric capsids (40,000X). Empty capsids appear as hexagonal shapes with dark centers, while full capsids appear as hexagonal shapes of uniform color. Scale bar (white) is 100 nm. Visual artifacts (lines and dark patches) are the result of grid damage.

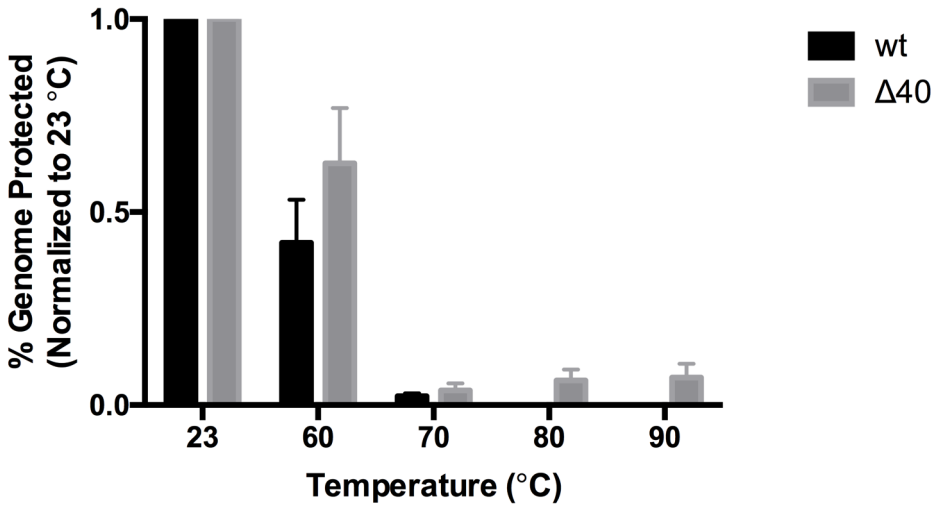

Figure S2: Benzonase genomic protection assay of Δ40 homomeric VNP post-incubation. Δ40 was incubated at the stated temperatures for 30 minutes, then benzonase genomic protection assay was conducted. wt AAV2 is included as a control. Genomic protection was normalized to the level of protection at 23°C for both VNPs. Δ40 exhibits low degrees of genomic protection after incubation at 80°C and 90°C, while wt exhibits no genomic protection after incubation at these temperatures. Error bars are SEM (N=3).

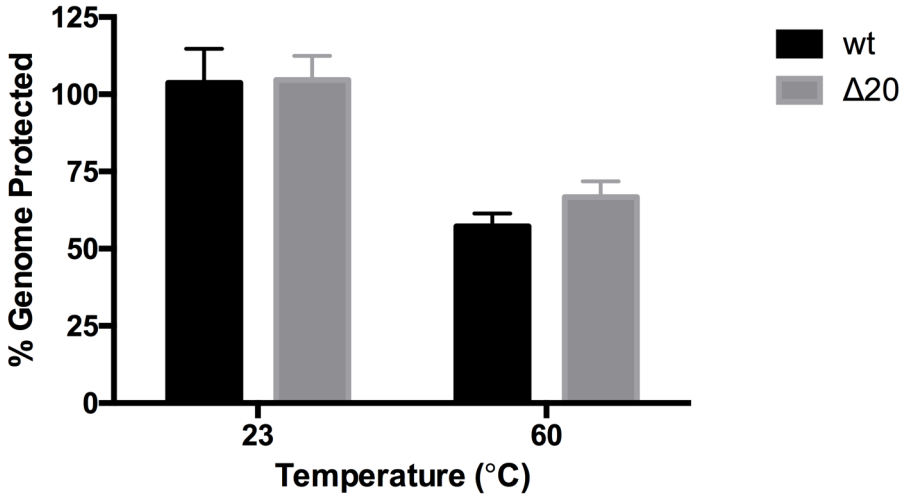

Figure S3: Benzonase genomic protection assay of Δ20 homomeric VNP post-incubation. Δ20 was incubated at the stated temperatures for 30 minutes, then benzonase genomic protection assay was conducted. wt AAV2 is included as a control. Differences between Δ20 and control are not significant. Error bars are SEM (N=3).

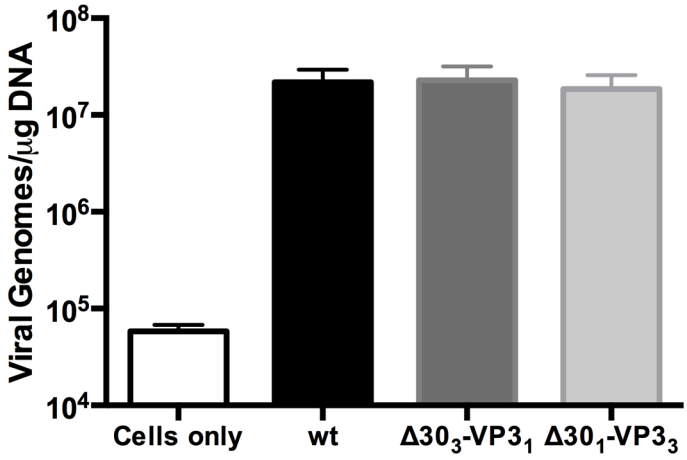

Figure S4: Cellular internalization of $\Delta 30_3$-$VP3_1$ ("ON") and $\Delta 30_1$-$VP3_3$ (activatable) VNPs. 1.8E6 confluent HEK293T cells were transduced with VNPs at 5,000 multiplicity of infection. After 2 hours, cells were washed with PBS 3 times and harvested. Intracellular DNA was extracted using E.Z.N.A. Tissue DNA Kit (Omega Bio-tek). Viral genomes were quantified with qPCR and normalized to total DNA extracted. wt AAV2 and cells without transduced virus are included as positive and negative controls, respectively. Error bars are SEM (N=2).