



Supplementary Figure 3. Purification of full, partial, and empty fractions by CsCl gradient ultracentrifugation. (A) Photographs of batch 2 pTx/HEK293- and rBV/Sf9-produced vectors subjected to CsCl density gradient ultracentrifugation. Pictures demonstrate the first (1°) and second (2°) spins to obtain empty (red box, LD), partial (violet box, MD), and full + oversized (blue box, HD) particle fractions reported in Figures 4-6. Following the second centrifugation, we observed among the highdensity fractions, which consist of full and oversized particles, that the pTx/HEK293-produced vector demonstrated a clear delineated band (arrowhead), while the rBV/Sf9-produced vector showed a poorly defined high-density population.

(B) Table to summarize the densities for the three fractions. (C) Analytical ultracentrifugation analyses of pTx/HEK293- and rBV/Sf9-produced vectors. Blue and purple signals respectively correspond to the sedimentation profile obtained by absorbance at 260 nm (A₂₆₀) and interference fringe shift (J). The x axis is the sedimentation coefficient (S). The y axis is the normalized distribution *c*(*s*). The fringe shift signal was used to determine the percentage of the different types of capsids. (D) Silver stained PAGE gel of isolated full and empty vector fractions. Protein bands attributed to VP1, VP2, and VP3 are annotated. The high-and low-density fractions of the pTx/HEK293- and rBV/Sf9-produced vectors displayed the approximate and expected 1:1:10 ratio of VP1:VP2:VP3 capsids.¹ Notably, the rBV/Sf9-produced vectors showed minor baculoviral cathepsin-cleaved VP1/2 bands.^{2, 3} Silver staining of capsids for the partial fractions were similar to full and empty fractions (unpublished observations).

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- 2. Galibert, L, Savy, A, Dickx, Y, Bonnin, D, Bertin, B, Mushimiyimana, I, *et al.* (2018). Origins of truncated supplementary capsid proteins in rAAV8 vectors produced with the baculovirus system. *PLoS One* **13**: e0207414.
- 3. Cecchini, S, Virag, T, and Kotin, RM (2011). Reproducible high yields of recombinant adeno-associated virus produced using invertebrate cells in 0.02- to 200-liter cultures. Hum Gene Ther 22: 1021-1030.