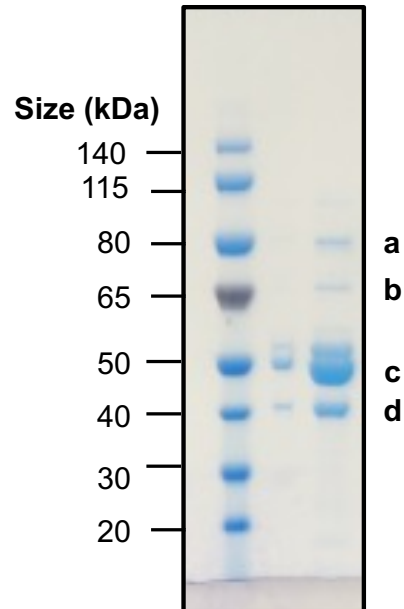
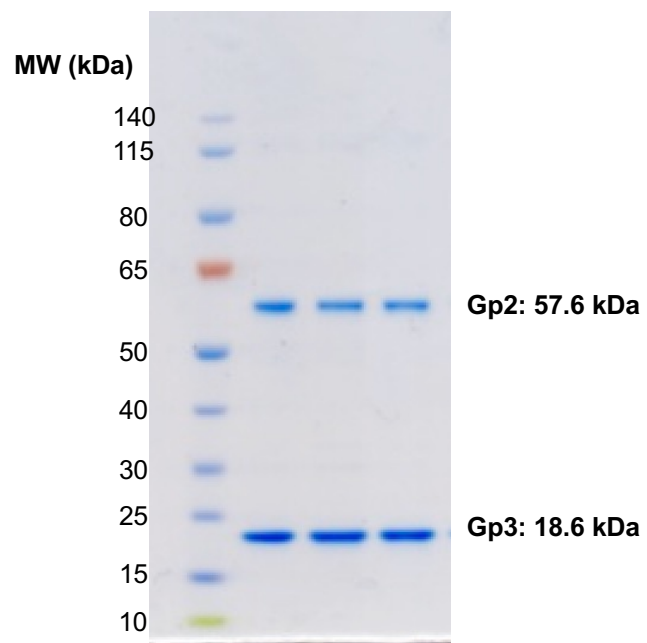


**Supplementary Figure 1. Random Conical Tilt data acquisition.** To improve sample contrast, sample was applied to thin carbon layer over the holes of C-Flat grids. Both zero (left) and  $-55^\circ$  (right) image pairs were collected with a nominal magnification of 52000x, 1mm defocus,  $2.05 \text{ \AA}$  pixel size and a dose of  $20.15 \text{ e}^-/\text{\AA}^2$ . Particles were picked (red circles) using Difference of Gaussian algorithm.

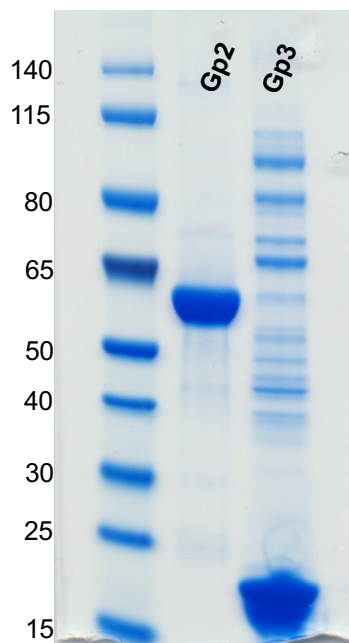
**A****B**

**Supplementary Figure 2. Purification of P22 procapsid.** (A) Procapsids migrate to interface of  $d = 1.2$ - $1.4$  CsCl step gradient. Procapsids appear as lens (orange arrow) when illuminated from above. (B) SDS PAGE gel indicating the components of the P22 procapsid. (a) gp1/Portal, (b) gp16/Injection protein, (c) gp5/Coat, (d) gp8/Scaffold.

**A**



**B**



**Supplementary Figure 3. P22 Terminase Complex. (A)** SDS-PAGE Coomassie gel showing triplicate runs of the gp2:gp3 complex. **(B)** Coomassie-stained SDS-PAGE gel depicting isolated gp2 and gp3 proteins.