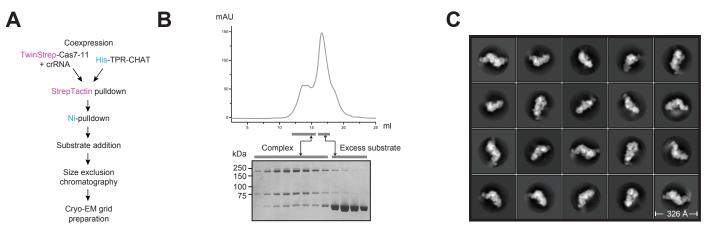
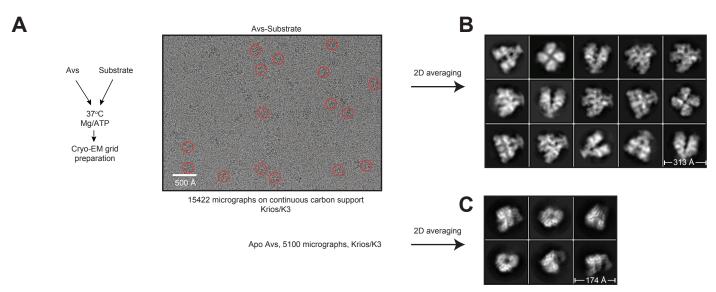


**Figure 1:** Imaging target DNA bound IsrB- $\omega$ RNA. (A) Image processing workflow. (B) Local resolution map calculated in cryoSPARC v3.3 with FSC threshold 0.5. (C) Particle orientation distribution plot.



**Figure 2:** Imaging Cas7-11/TPR-CHAT/Substrate. (A) Biochemical reconstitution of the Cas7-11/TPR-CHAT/Substrate complex. (B) Size exclusion chromatography and SDS-PAGE gel analysis of the assembled complex. (C) Representative 2D classes from 958,000 automatically picked particles obtained from an Arctica/Falcon 3EC session.



**Figure 3:** Imaging Avs in substrate bound and unbound forms. (A) Example cryo-EM micrograph of assembled Avs-Substrate complex. (B) Representative 2D class averages of Avs-Substrate from 128,500 automatically picked particles. (C) 2D averages from cryo-EM imaging of Avs alone. Remarkably, the substrate-bound Avs assembles into tetramers, whereas apo-Avs exists in monomeric form, demonstrating an NLR-like oligomerization behavior upon a pathogenic trigger.