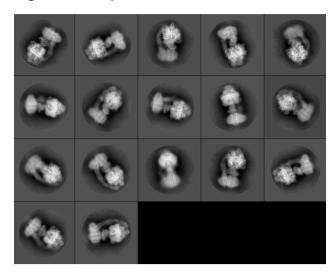
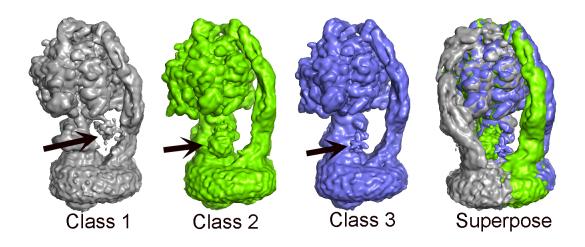
Figure 1. Samples were incubated with ATP:MgCl<sub>2</sub> before freezing.



A. 2D averages of cryo-EM particles.



**B. Three major conformations identified.** Class 1 (grey) no rotation. Class 2, (green)  $108^{\circ}$  rotation, 3. (blue)  $144^{\circ}$  rotation. The arrow points out T4-lysozyme, which is fused to the  $\delta$ -subunit. This serves as a reference point for the rotation of the central stalk. In Class 1, the T4-lysozyme is in the plane of this image. The superpose image shows the super-positioning of the complexes using the  $F_1$  as the reference.

**Class 1**, 46,000 particles, 3.6Å resolution, 3D refinement with a mask to a resolution of 3.2Å for  $F_1$  domain. **Class 2**, 18,000 particles at 4.5Å. **Class 3**, 37,000 particles, 3.8Å resolution, focused 3D refinement to 3.5Å for  $F_1$  domain.