SUPPLEMENTAL INFORMATION

Supplemental Figures

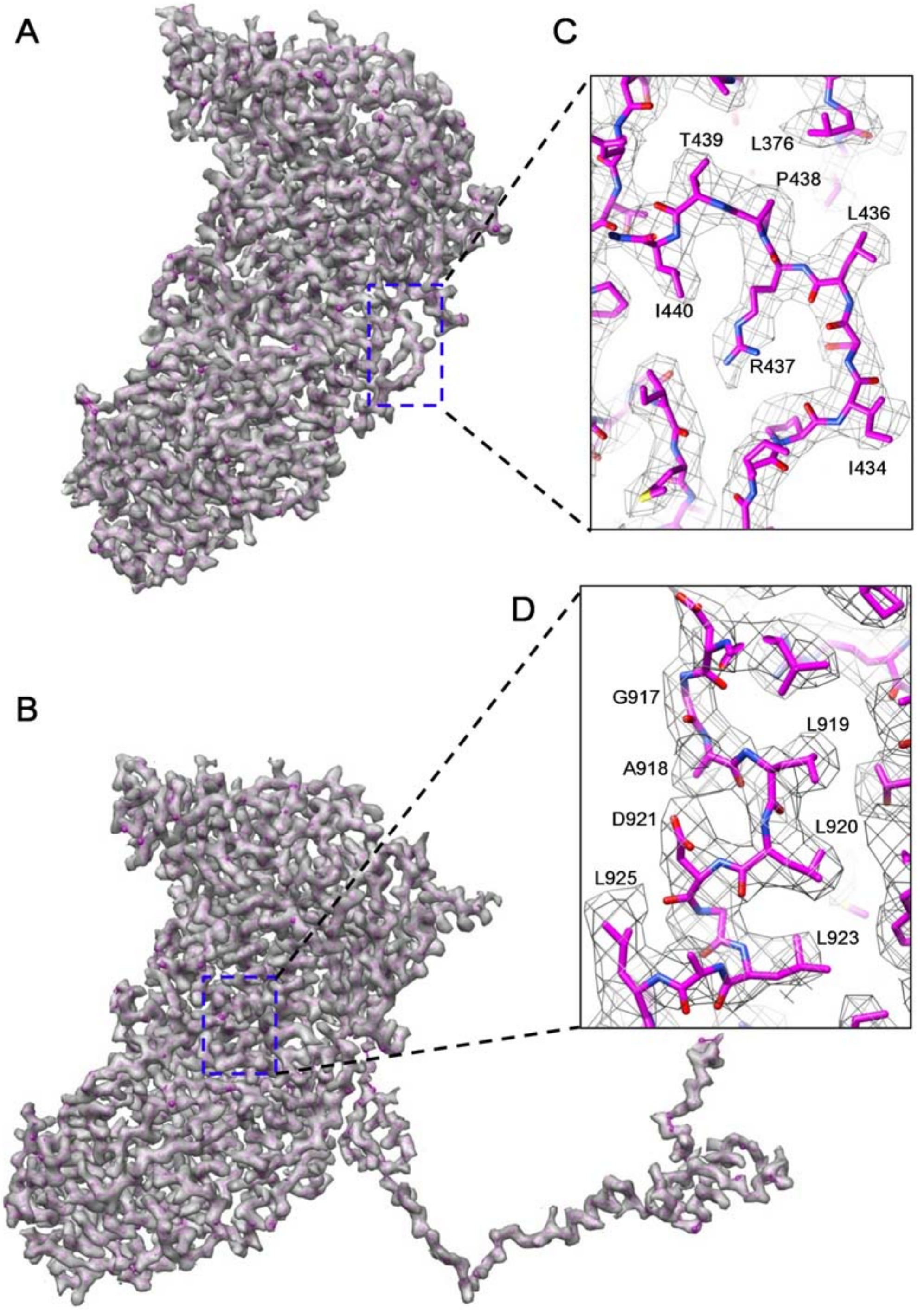

Figure S1. CryoEM Density of VP3 Monomers with their Atomic Models Superimposed

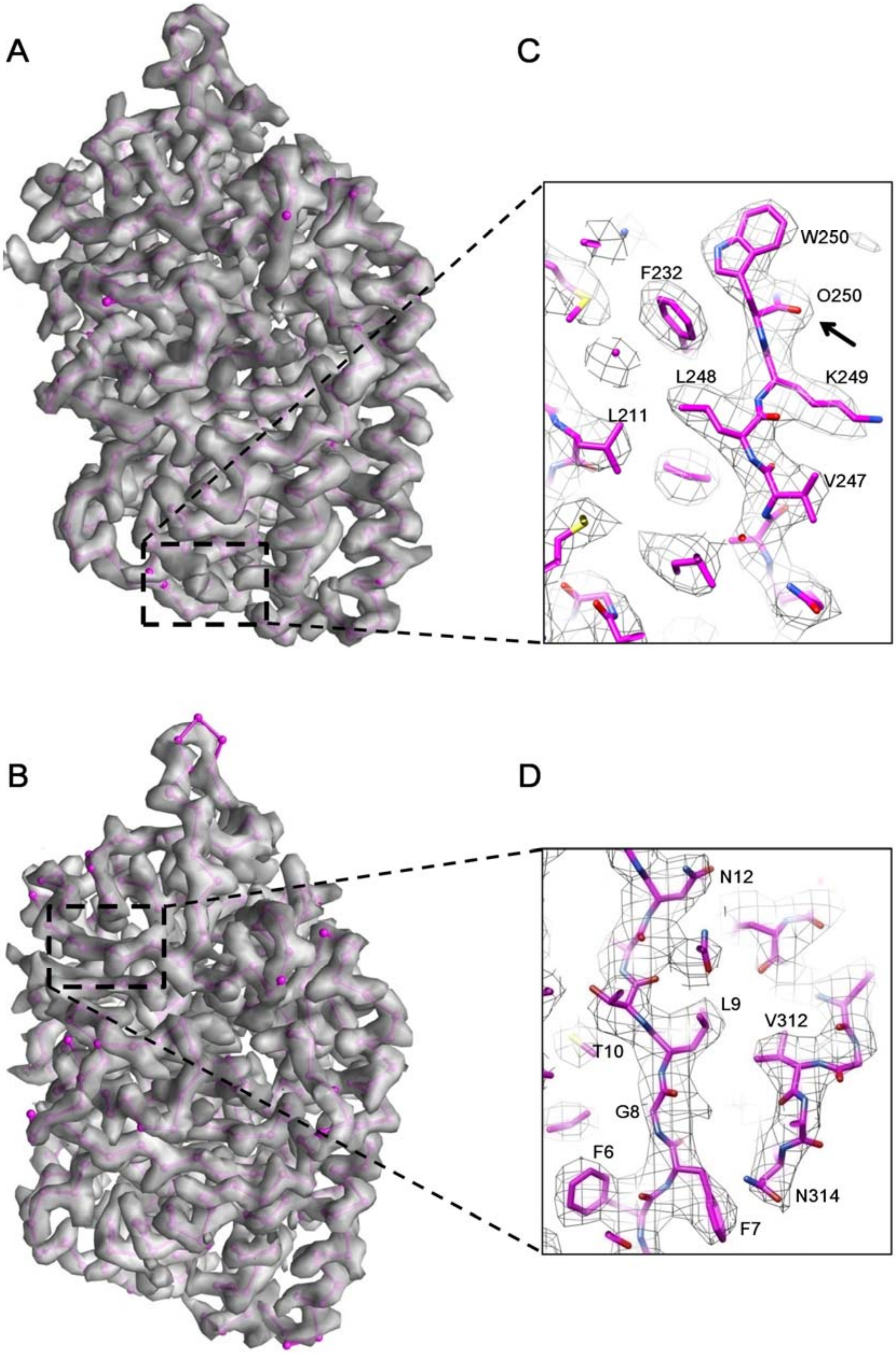

Figure S2. CryoEM Density of VP6 Monomers with their Atomic Models Superimposed

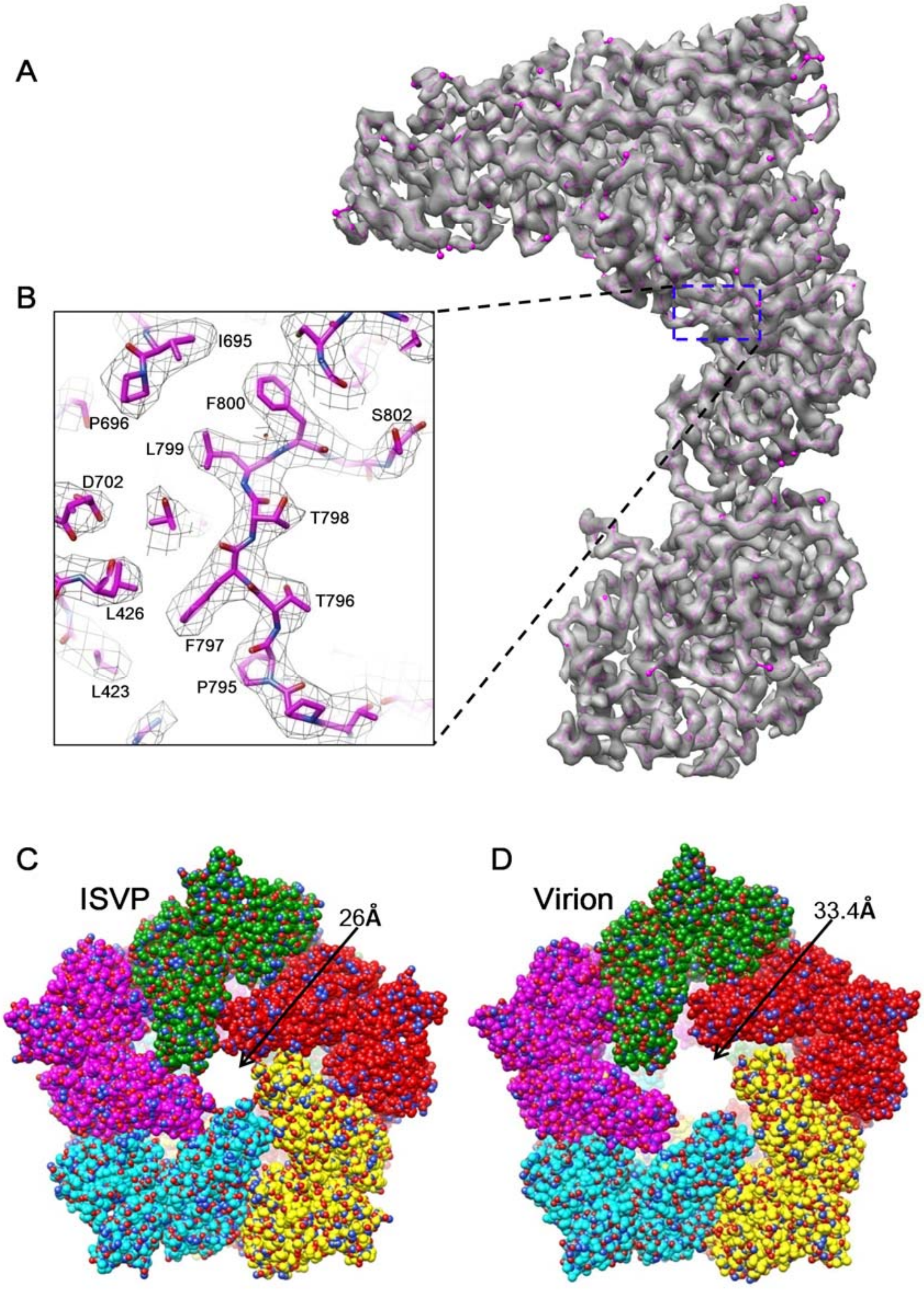

Figure S3. CryoEM Structure of the Turret Protein VP1

Supplemental Figure Legends

Figure S1. CryoEM Density of VP3 Monomers with their Atomic Models Superimposed, related to Figure 1

(**A**) and (**B**) Overall structures of VP3A and VP3B cryoEM densities (gray mesh) with their atomic models (pink, only backbone is shown) superimposed.

(**C**) and (**D**) Side chain densities (gray mesh) of VP3A and VP3B with atomic models (pink) superimposed. See also Movies S2.

Figure S2. CryoEM Density of VP6 Monomers with their Atomic Models Superimposed, related to Figure 2

(**A**) and (**B**) Overall structures of VP6A and VP6B cryoEM densities (gray mesh) with their atomic models (pink, only backbone is shown) superimposed.

(**C**) and (**D**) Side chain densities (gray mesh) of VP6A and VP6B with atomic models (pink) superimposed. The density for a carboxyl oxygen is also indicated by an arrow in (C). See also Movies S2.

Figure S3. CryoEM Structure of the Turret Protein VP1, related to Figure 2

(**A**) Overall structure of VP1 with its atomic model (pink, only backbone is shown) superimposed.

(**B**) Side chain densities (gray mesh) of VP1 with its atomic models (pink) superimposed. See also Movie S2.

(**C**) and (**D**) The space-filling models of VP1 pentamers, showing changing of the VP5 channel (diameter of 26Å in ISVP and 33Å in virion). See also Movies S2.

Supplemental Movie Legends:

Movie S1. Shaded Surface Representation of the Aquareovirus ISVP Reconstruction at 3.3 Å Resolution, related to Figure 1. The map is color-coded according to radius, as that in Figure 1C. An icosahedron is included to facilitate identification of symmetry axes.

Movie S2. Mesh Surface Representation of cryo-EM densities, related to Figure 2.

Part A: a α helix from the VP3A Protein with its atomic model (magenta) superimposed. All the side chain densities of this helix are clearly identifiable.

Part B: a β-hairpin from the VP3A Protein with its atomic model superimposed. The side chain densities stick out perpendicularly to the plane of the β-hairpin.

Part C: Structure of the VP6A protein. Cryo-EM Density (gray mesh) is Superimposed on its Atomic Model (magenta; only backbone is shown).

Part D: Structure of the guanylyltransferase domain of the VP1 Protein. CryoEM Density (gray mesh) is Superimposed with its Atomic Model (magenta sticks).

Movie S3. Structure of the Membrane Penetration Protein VP5, related to Figure 4. Cryo-EM density (gray mesh) is superimposed with its atomic model (magenta; only backbone is shown). Asn42 (red ball) and Pro43 (green ball) are indicated, and the myristoyl group is represented by a string of red balls.

Movie S4. Atomic Model of a VP5 Trimer Shown as Ribbon Models, related to Figure 5. Atomic model of a VP5 trimer shown as ribbon models with each monomer color-coded differently (green, magenta, and blue). The myristoyl groups are represented by strings of red balls, and Asn42 and Pro43 are indicated by a red ball and a green ball, respectively.