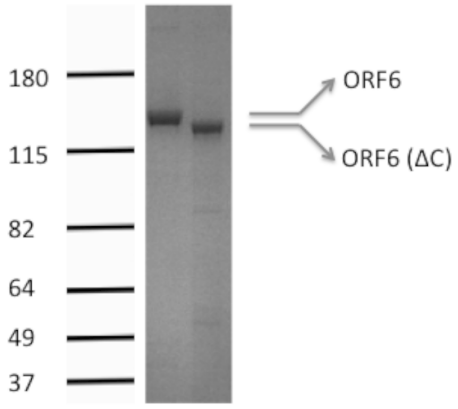
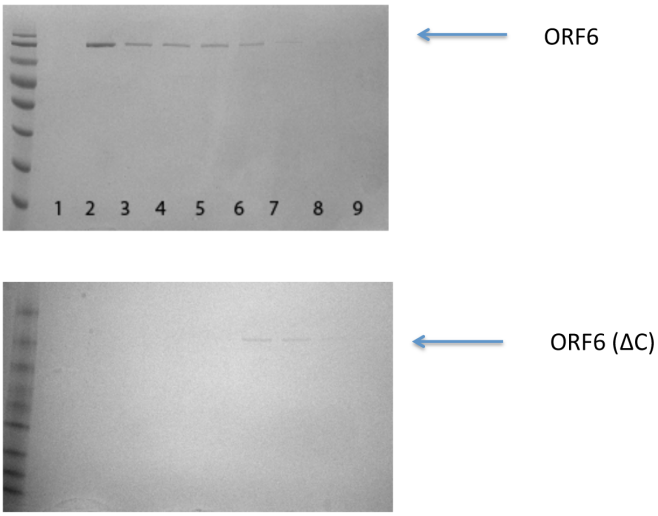
# Supplemental Figure 1



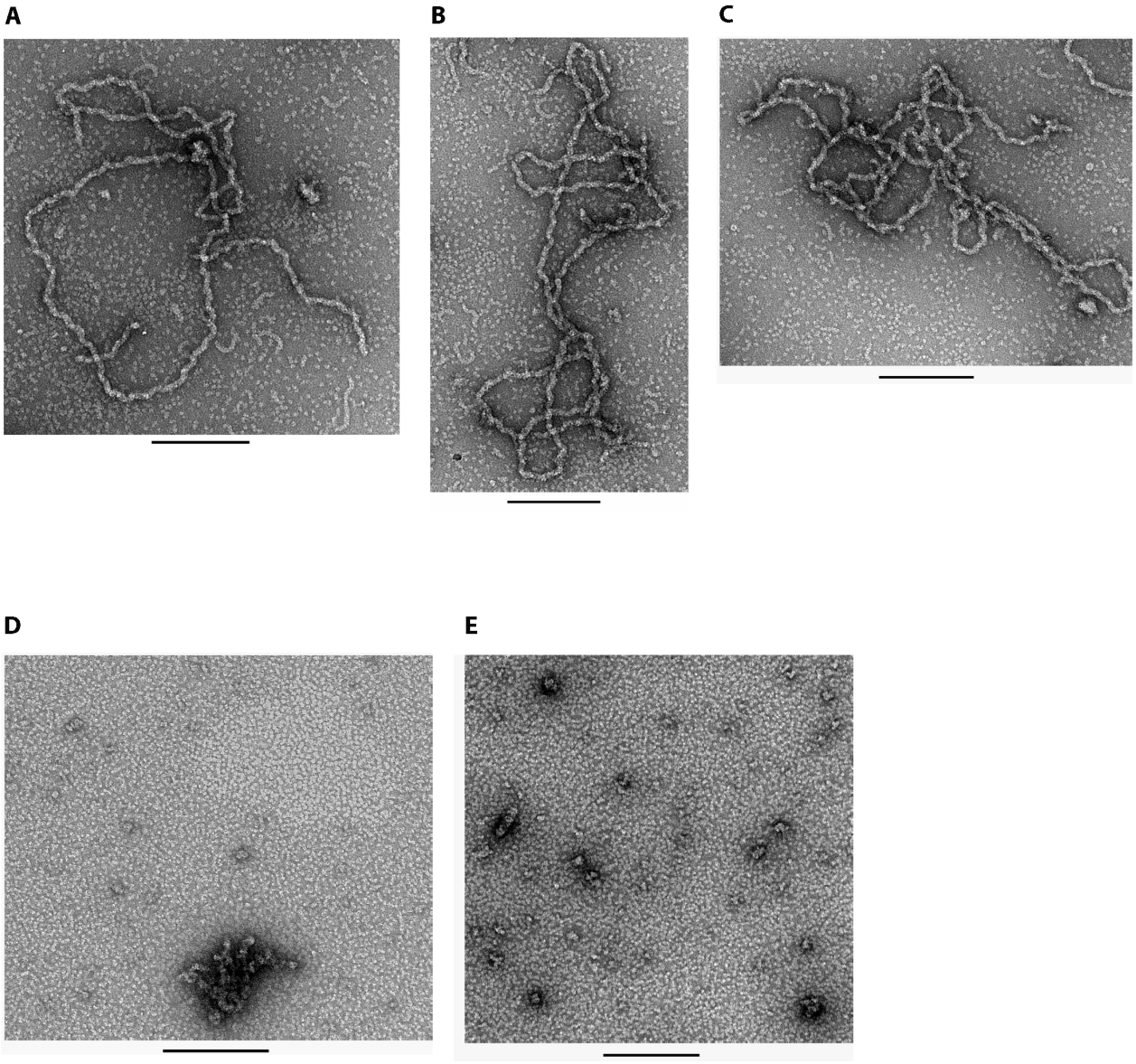

**Supplemental Figure 1. Protein expression and purification of ORF6ΔC from insect cells. Purified ORF6 and ORF6ΔC were analyzed on SDS-PAGE gels and the proteins were stained with Coomassie blue. The proteins were purified using nickel resin from extracts of SF21 virus-infected cells. The position of each protein is indicated on the right.**

# Supplemental Figure 2



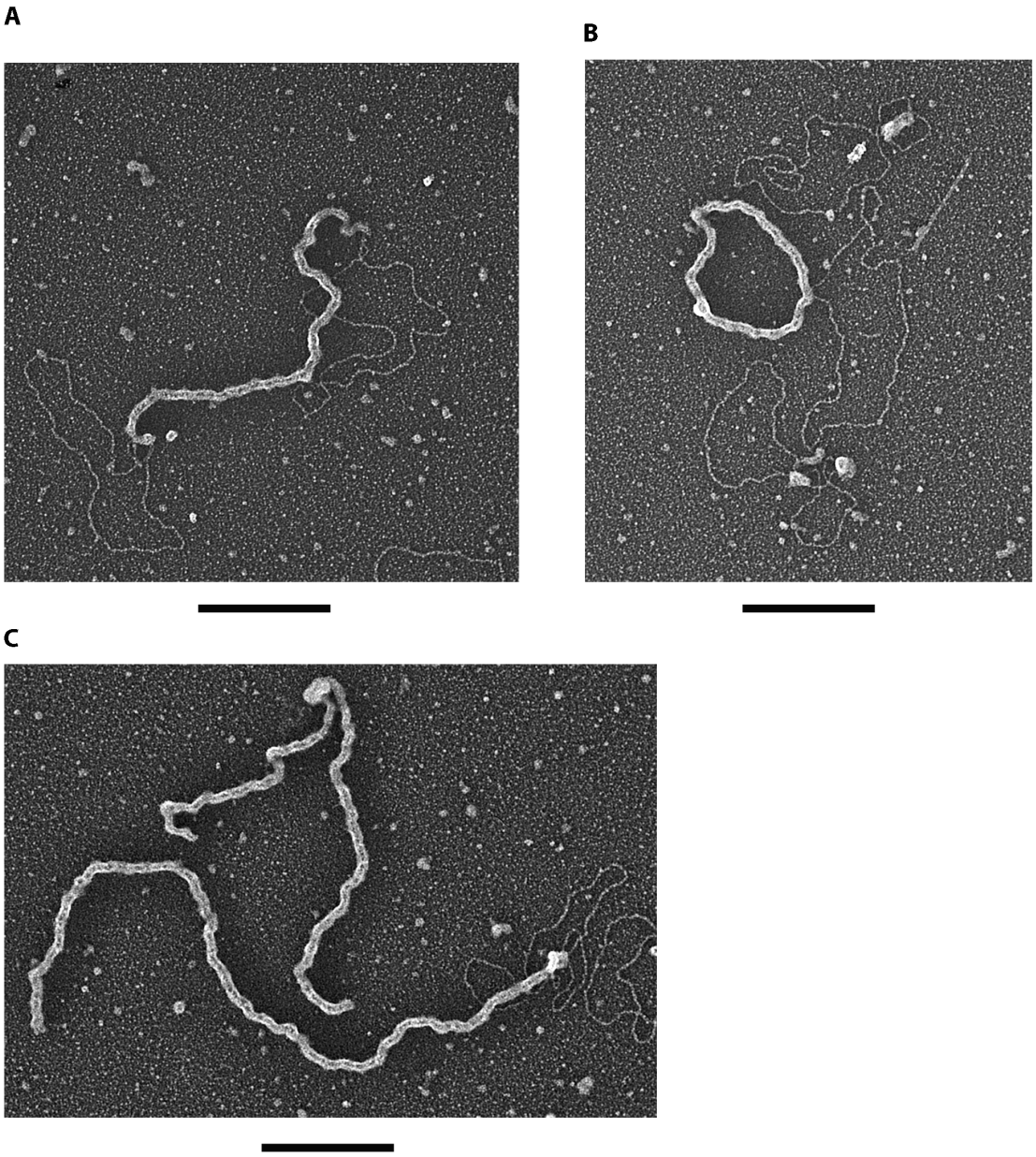

**Supplemental Figure 2. Size analysis of ORF6 and ORF6ΔC using size exclusion chromatography. One hundred micrograms of each protein were applied to a Superdex 200 column attached to an AKTA FPLC. The column was equilibrated with buffer containing 20 mM Tris pH 7.4, 150 mM NaCl, 1 mM DTT and 5% glycerol with a flow rate of 0.3 ml/min. The elution profiles of each protein were analyzed on SDS-PAGE gels and stained with Coomassie Blue dye. The locations of the proteins are relative to each other with most of the ORF6 being in the void volume or lin arge complexes and with ORF6ΔC being primarily in a dimeric or monomeric state.**

**Supplemental Figure 3**



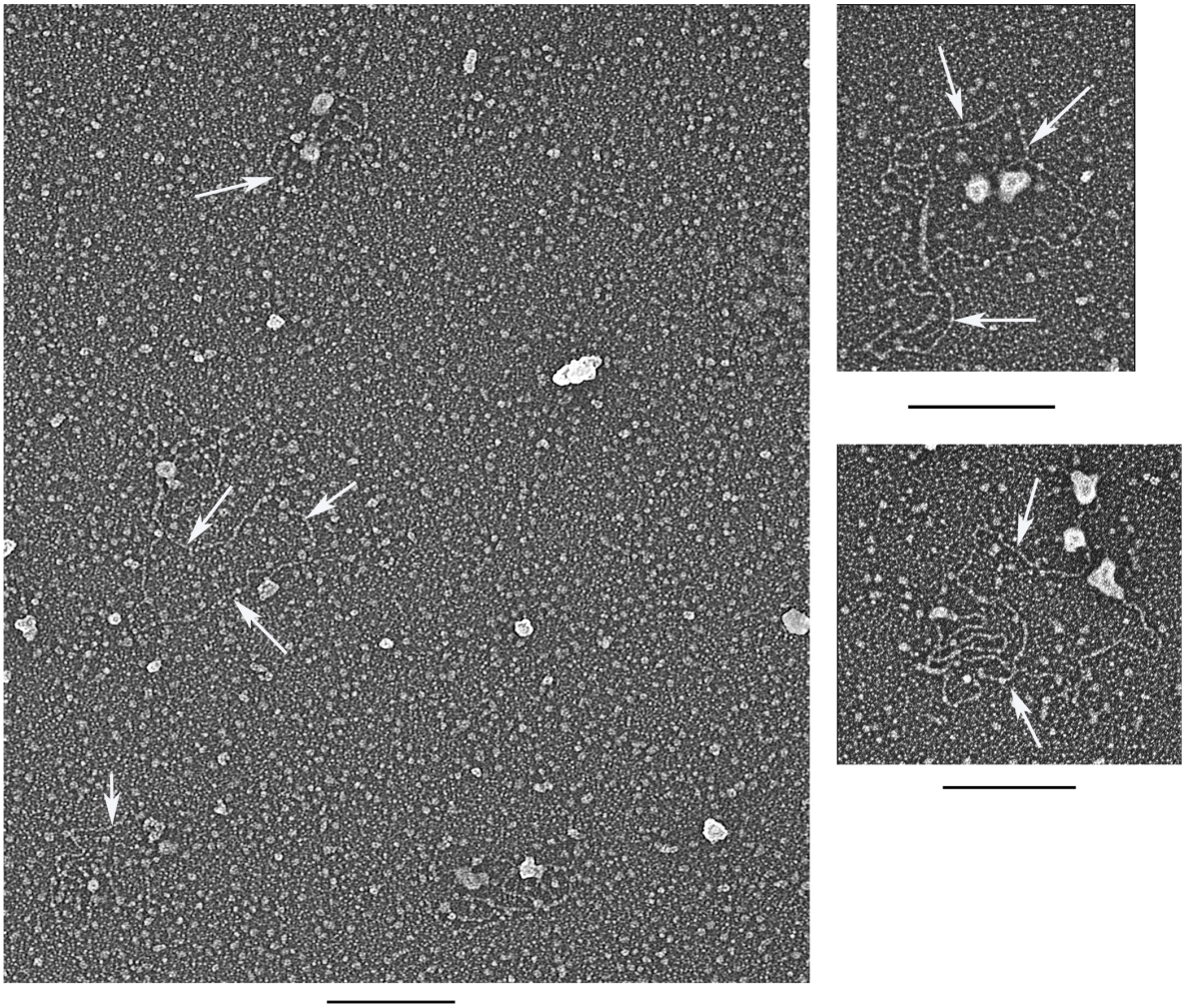

**Supplemental Figure 3. Under identical reaction conditions, most of the ORF6 protein seen on the grids was in the filamentous structure with monomeric proteins still being visible in the background (A-C). In the same time, as seen in D and E, the C-terminally deleted protein , ORF6ΔC, was almost all in monomeric form with occasionally seen protein aggregates as seen in D or more often observed as smaller aggregates as seen in figure E. This is a clear demonstration that the mutant ORF6 is incapable of forming long uniform filaments as the wild type protein.**

**Supplemental Figure 4**




**Supplemental Figure 4. ORF6 filaments incubated with ds circular DNA containing a 400 base long single stranded tail. ORF6 was incubated for 3 hours at room temperature to allow self filamentation to occur. The DNA substrate was added to the mixture and further incubated for 20 minutes at room temperature. The sample was absorbed to a charged carbon foil grid followed by rotary tungsten shadowing as described in Materials and Methods. The bar is equivalent to 200 nm. A) ORF6 interacts with two DNA molecules with their ssDNA tails buried at the ends of the ORF6 filament. B) A circular ORF6 filament has the ss tail of the circular ds DNA embedded in it. In figure C, two ORF6 filaments are present. The upper one does not contain any DNA molecule attached to it. The lower ORF6 filament interacts with a DNA molecule with its ss tail buried in the filament.**

**Supplemental Figure 5**



**Supplemental Figure 5. ORF6ΔC was pre-incubated for 3 hrs to allow filament formation prior to the addition of the circular dsDNA containing a 400 base long single standed tail as described in Materials and Methods. The sample was absorbed to a charged carbon foil grid followed by rotary tunsgten shadowing. The bar is equivalent to 200 nm. The arrows point to dsDNA. ORF6ΔC is visible in the background as monomers. The bigger globular moieties on the dsDNA are the ssDNA tails interacting with the ORF6ΔC protein.**