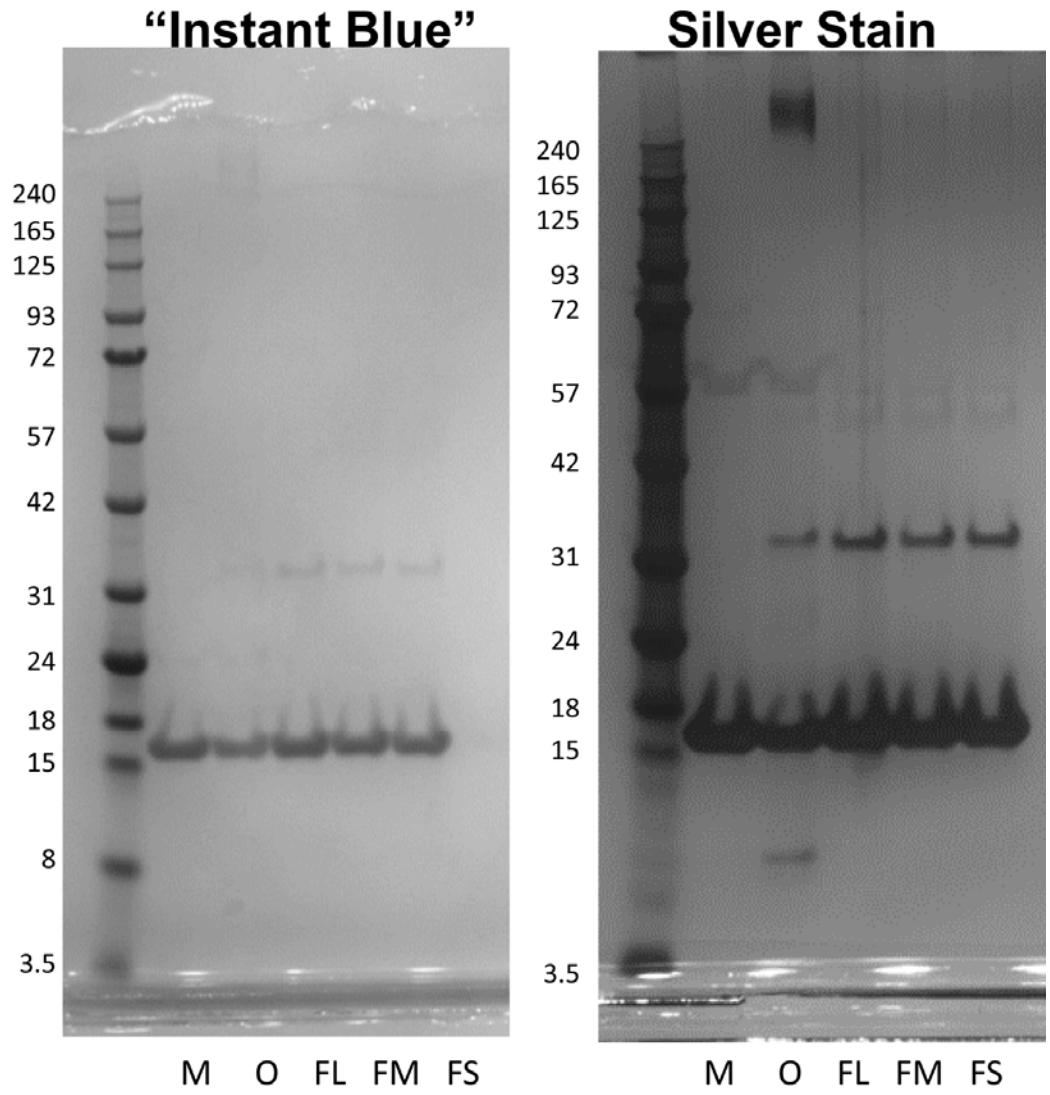
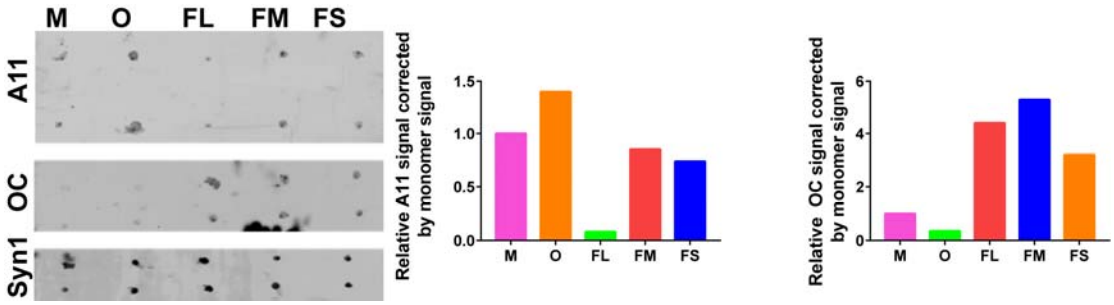
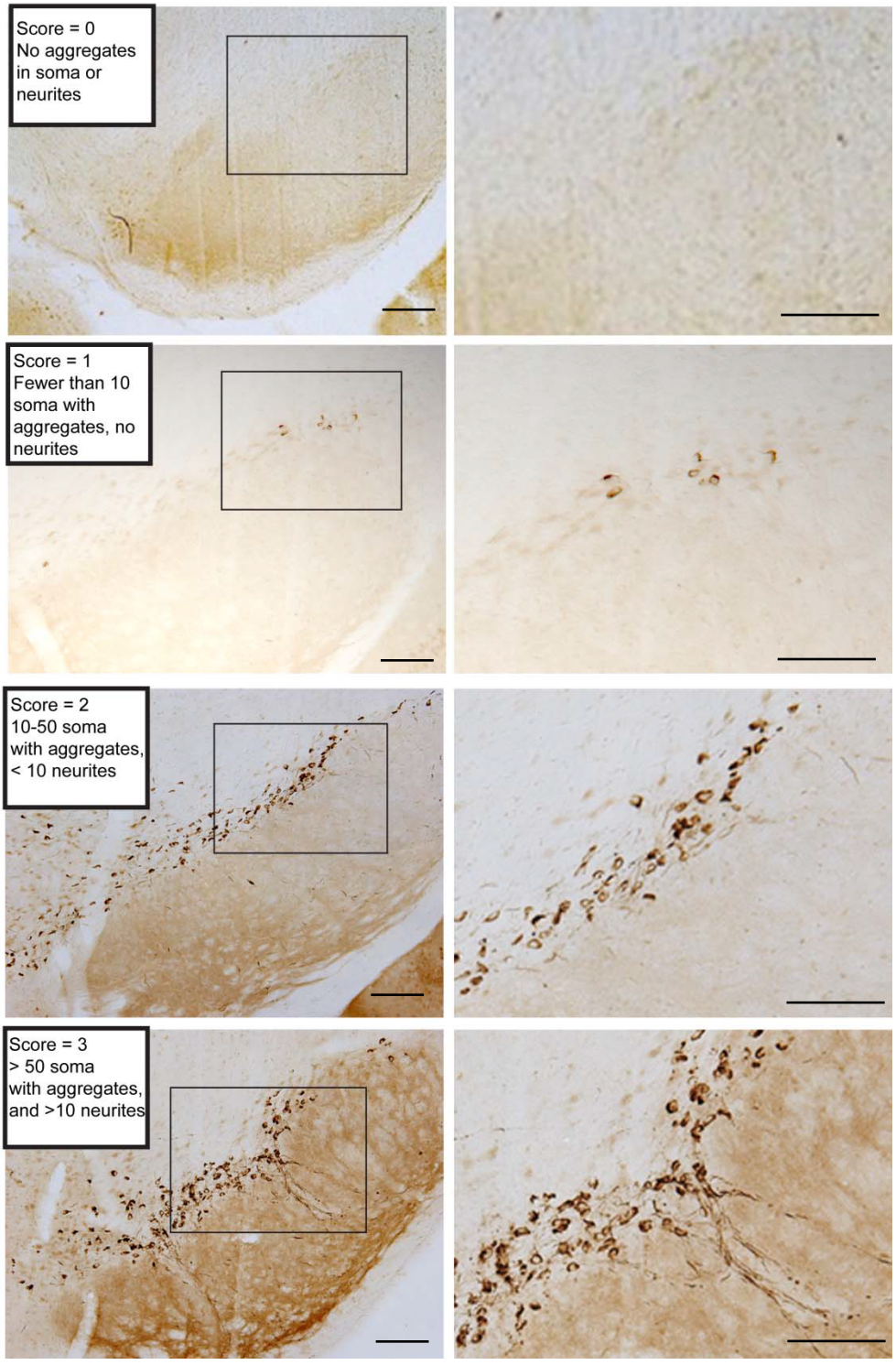


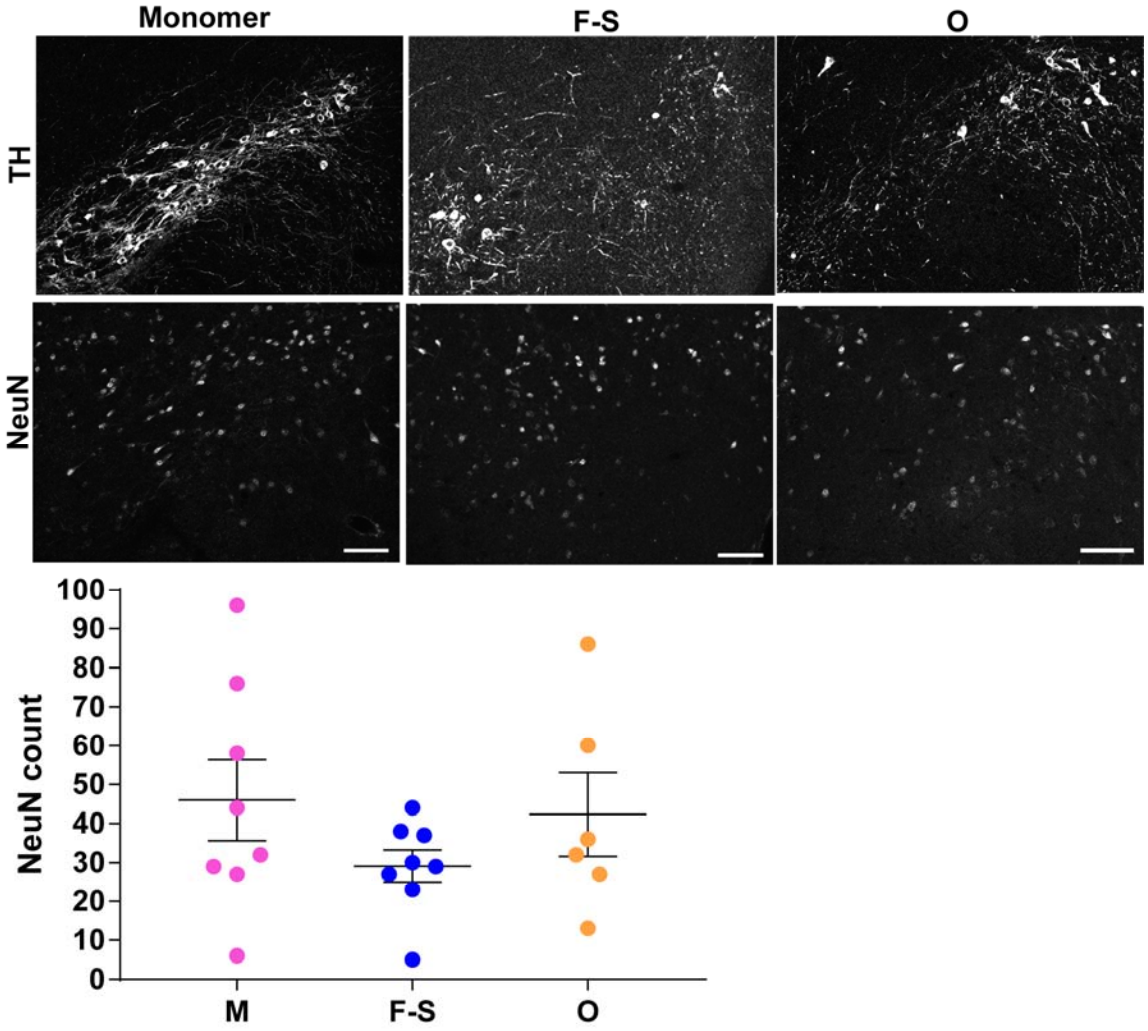
Supplemental Figure 1. Five μM of the following species were incubated overnight with 7M Urea to dissociate the oligomers and fibrils into monomer: monomer (M), unsonicated fibrils (FL), sonicated fibrils (FM), sonicated fibrils filtered to enrich for short fibrils (FS), and oligomer (O). The α-synuclein was resolved using SDS-PAGE and bands were visualized using either "instant blue" or silver stain. Some monomer degradation can be seen in the oligomeric sample .



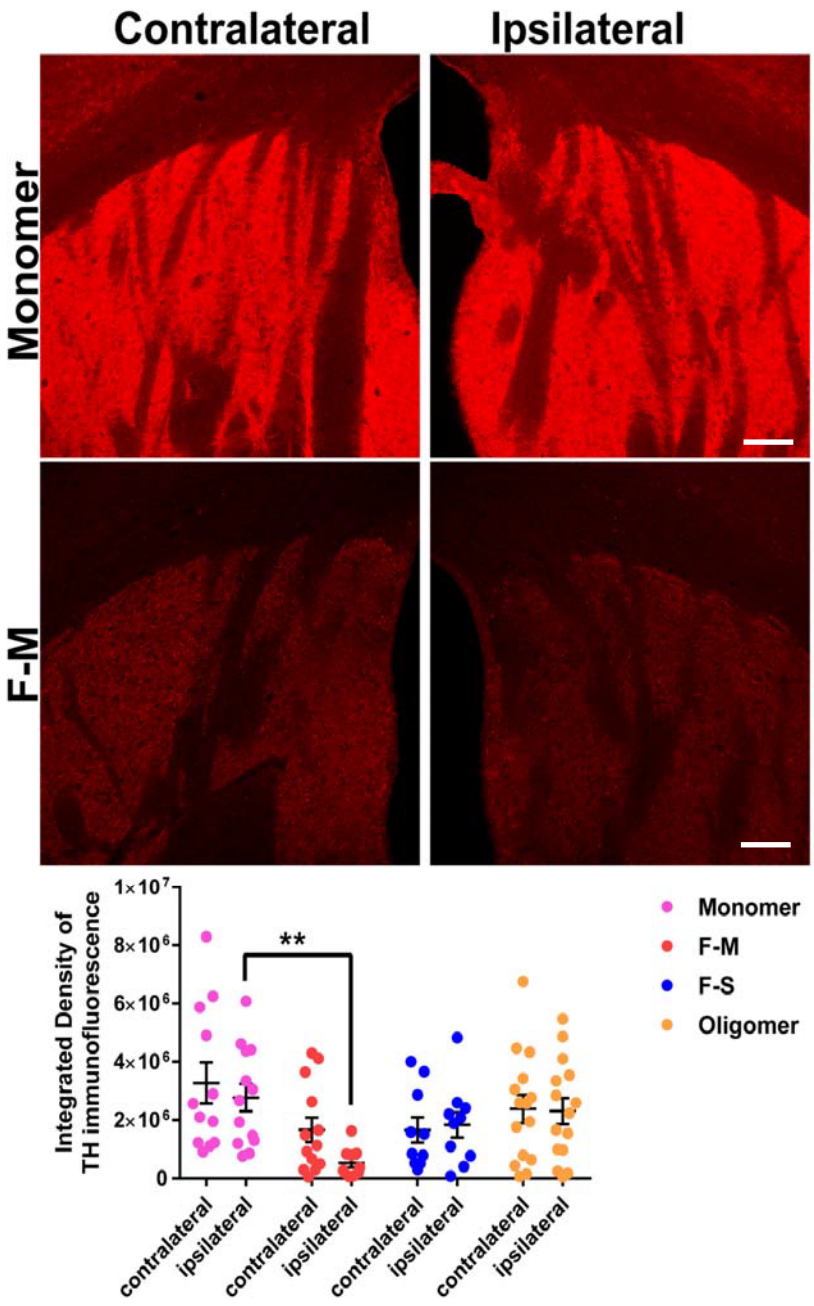
Supplemental Figure 2. One nanogram of the following species were spotted onto a 0.22 µm polyvinylidene membrane": monomer (M), unsonicated fibrils (FL), sonicated fibrils (FM), sonicated fibrils filtered to enrich for short fibrils (FS), and oligomer (O). Membranes were incubated with : A11 to recognize pre-fibrillar oligomers, OC to recognize fibrils or Syn1 to recognize total α-synuclein. Blots were quantified and the signal was normalized to the signal produced by monomeric α-synuclein.



Supplemental figure 3. Representative images from SNc demonstrating how the abundance of p-α-synuclein inclusions were scored for Figure 4 and for Table 2. Scoring was performed by an researcher blinded to experimental conditions. Scale bar = 500 μm.



Supplemental Figure 4. Double labeling immunofluorescence for TH and NeuN was performed using sections of SNc from mice that received unilateral injections of M, F-S, or O. Images were captured using confocal microscopy. In image J, the colors were separated and thresholded using MaxEntropy autothreshold. The TH images was used to outline the SNc and the outline was transferred to the NeuN image. NeuN was converted to a binary image and "Analyze Particles" was used to count neurons. Data is presented as the mean NeuN count +/- SEM (N, monomer = 8, N, F-S = 8, N, O = 6. ANOVA revealed no significant differences between groups. Scale bar = 100



Supplemental Figure 5. Confocal images were captured from striatal sections in which immunofluorescence for TH was performed from mice that received unilateral injections of M, F-M, F-S, or O. The top panel shows TH immunofluorescence from the same monomer section in Figure 6 that was co-stained for both DAT and an Alexa-488-goat anti-rat secondary, and TH and an Alexa-555-goat anti-chicken secondary. The bottom panel shows a representative striatal section with TH immunofluorescence from an F-M injected mouse. The images were thresholded and the dorsolateral striatum was outlined. Data is presented as the integrated density +/- SEM. A two-way ANOVA with repeated measures (within subject factor, injection side, between subject factor, treatment) was performed. Scale bar = 100 μm.