Supplementary Figures for:

α-synuclein expression from a single copy transgene increases sensitivity to stress and accelerates neuronal loss in genetic models of Parkinson's disease

Jason F. Cooper[1], Katie K. Spielbauer[1], Megan M. Senchuk[1], Saravanapriah Nadarajan[2], Monica P Colaiácovo[2], Jeremy M. Van Raamsdonk[1,2,3,4]

[1]Laboratory of Aging and Neurodegenerative Disease, Center for Neurodegenerative Science, Van Andel Research Institute, Grand Rapids MI 49503, USA

[2]Department of Genetics, Harvard Medical School, Boston MA 02115, USA

[3]Department of Neurology and Neurosurgery, McGill University, Montreal, Quebec, H3A 2B4, Canada

[4]Metabolic Disorders and Complications Program, and Brain Repair and Integrative Neuroscience Program, Research Institute of the McGill University Health Centre, Montreal, Quebec, H4A 3J1, Canada

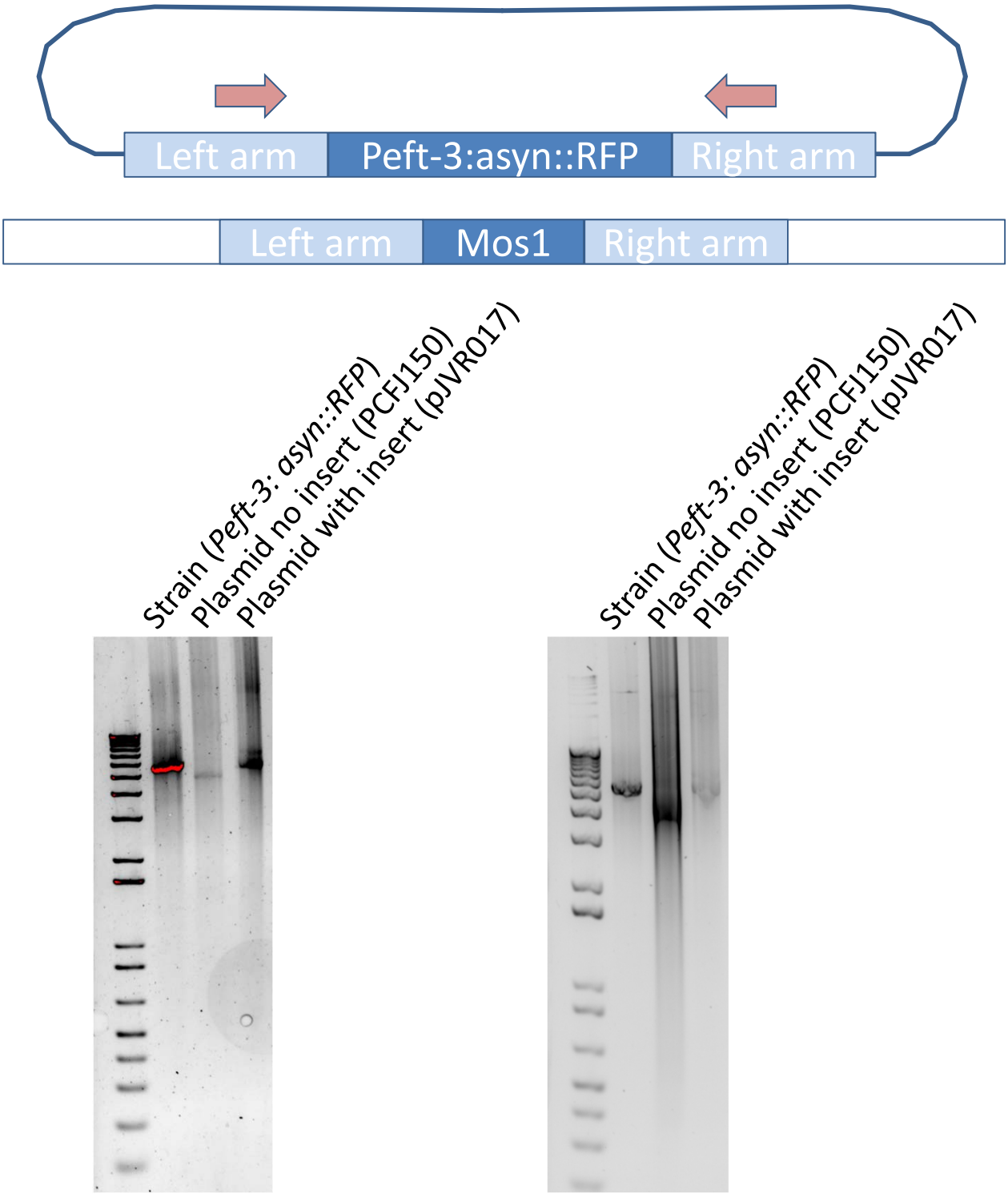

Fig. S1. A single copy of α-synuclein transgene is present in ubiquitously expressing α-synuclein model. A. Diagram of MosSCI (Mos1-mediated single copy insertion) approach. The *mos-1* gene present in the genomic DNA is replaced with the genetic material between the left and right arms, in this case the Peft-3::asyn:RFP transgene (and *unc-119* rescue construct). Red arrows indicate the location of primers. **B.** Amplification of Mos1 region in *Peft-3::asyn:RFP* worm produces a band which is identical to amplification of the original plasmid DNA (pJVR017). The size of this fragment is larger than the plasmid without the Peft-3::asyn:RFP transgene integrated (PCFJ150). This confirms that the ayn:RFP was inserted as a single copy transgene.

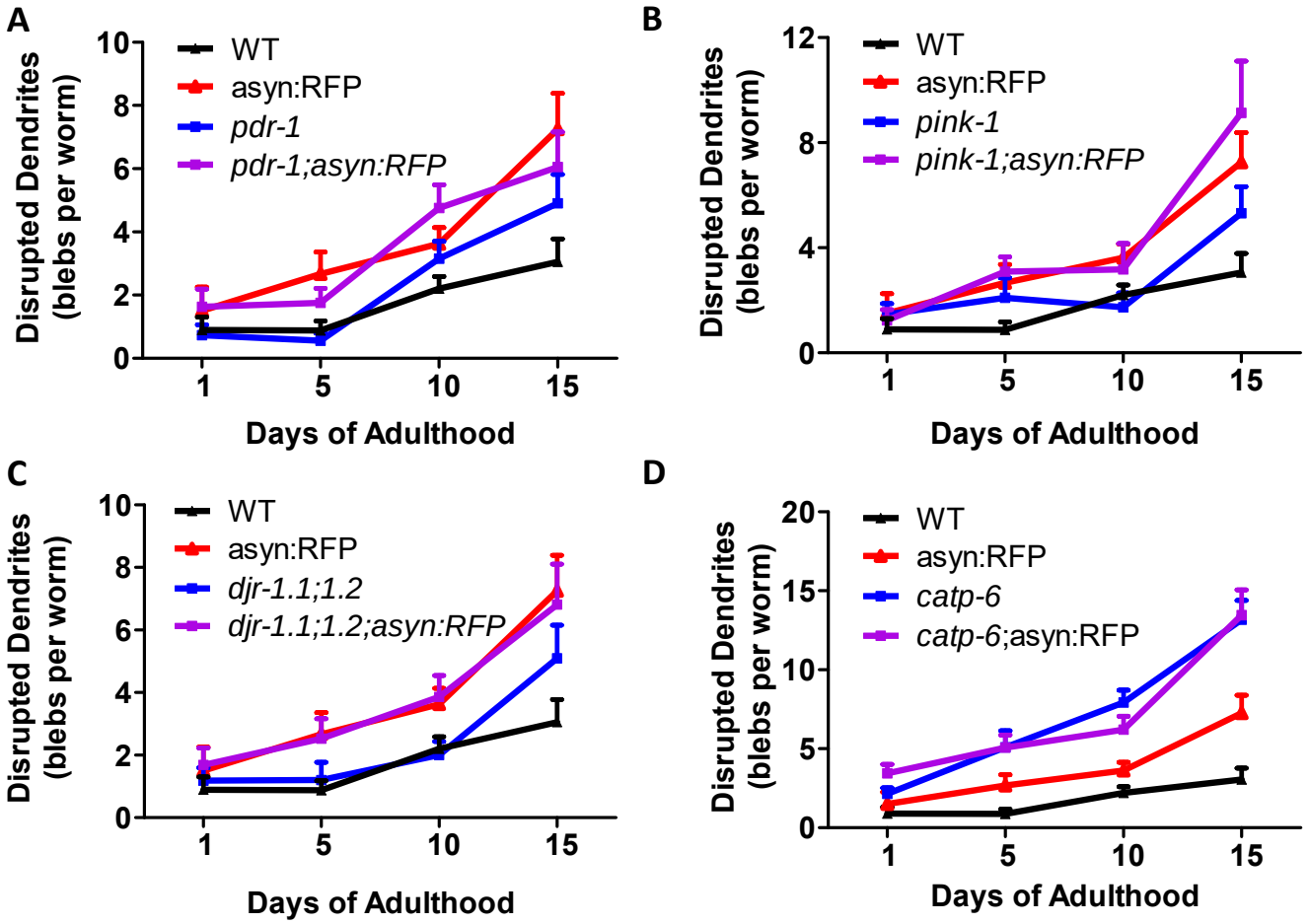

Fig. S2. α-synuclein expression increases neuronal blebbing independent of strain background. The addition of asyn::RFP increases dendritic blebbing compared to control in *pdr-1* (**A**), *pink-1* (**B**) , and *djr-1.1* (**C**) animals but does not further increase blebbing in *catp-6* worms (**D**). Error bars indicate SEM.

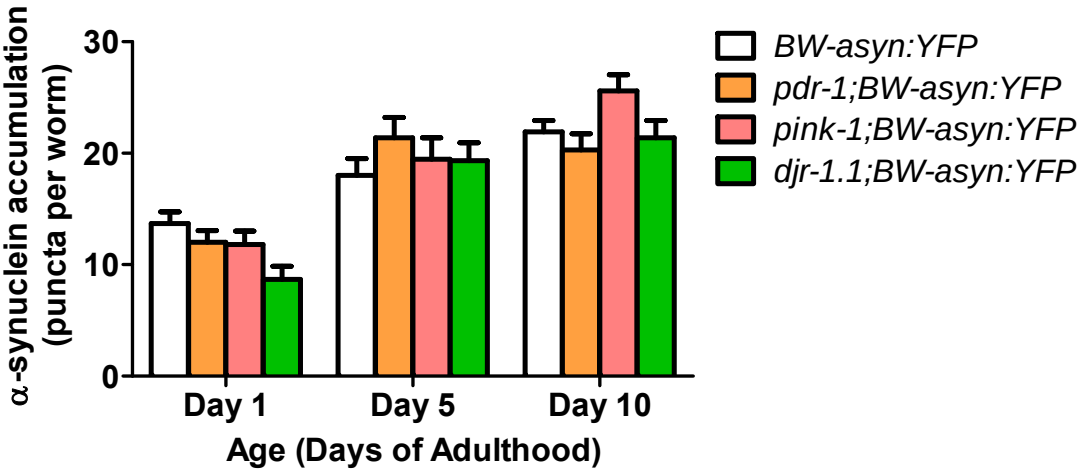

Fig. S3. Mutations in *pdr-1, pink-1* and *djr-1.1* do not accelerate aggregation in BW-asyn:YFP worms. Fluorescent puncta were quantified using an automated image analysis protocol. *Punc-54::α-syn:YFP* worms are indicated as BW-asyn:YFP. Error bars indicate SEM. *p<0.05, **p<0.01, ***p<0.001.