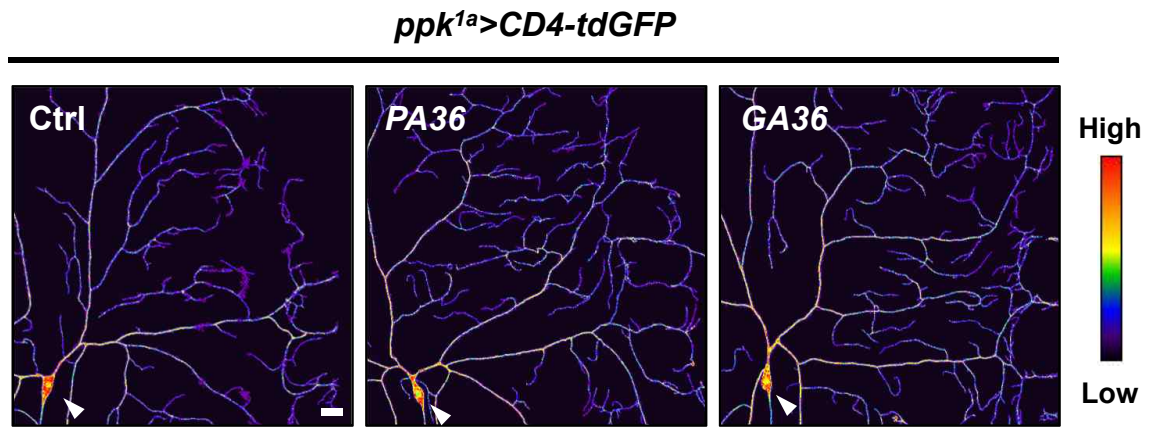
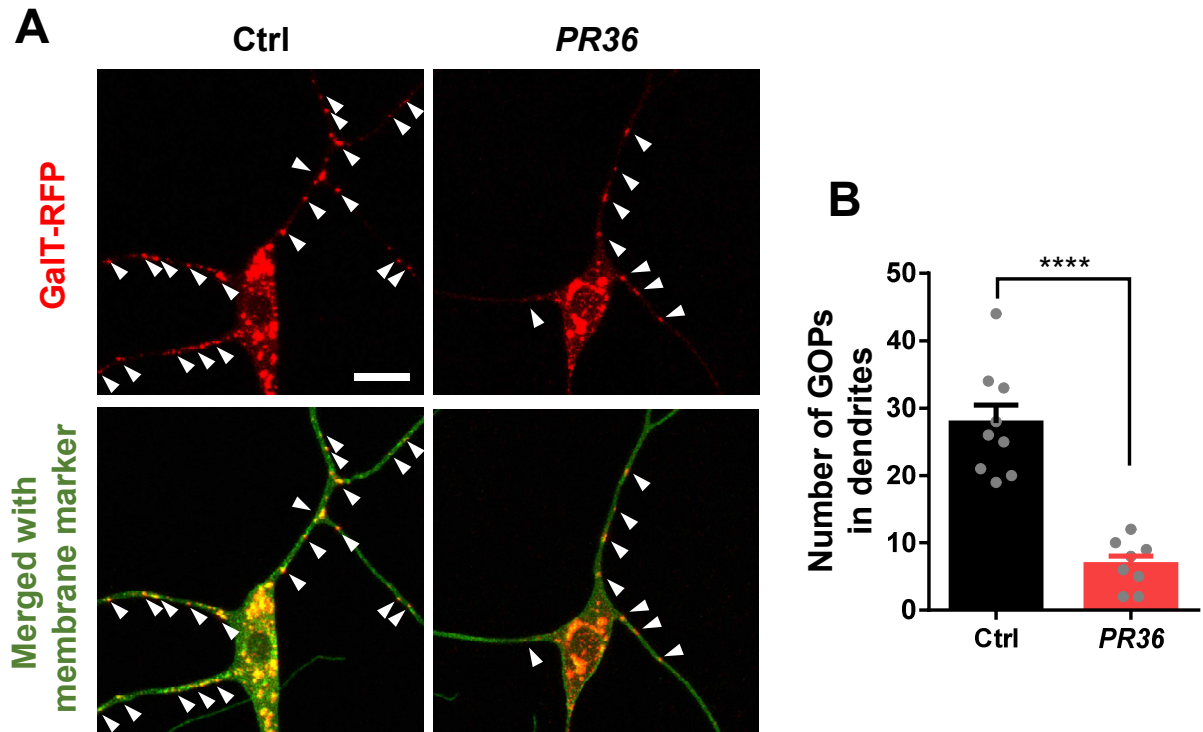


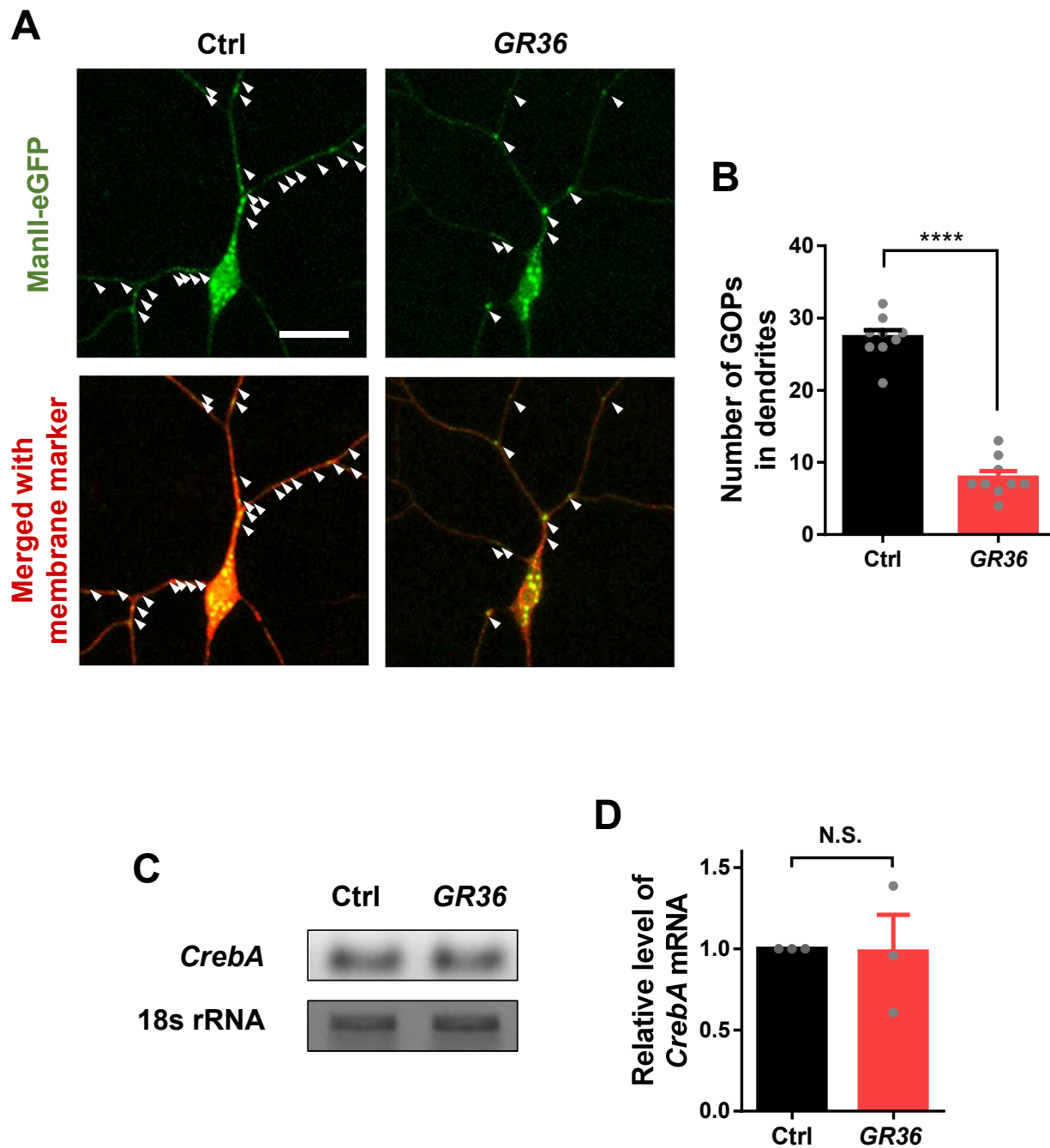
Supplementary Fig. S1. Arginine-rich DPRs do not alter axonal morphology in *da* neurons. Representative images of axons in larval ventral nerve cord (VNC) (Genotype: Ctrl, $+/+;ppk^{1a}>UAS-CD4-tdGFP/+$; PA36, $UAS-PA36/+;ppk^{1a}>UAS-CD4-tdGFP/+$; GA36, $UAS-GA36/+;ppk^{1a}>UAS-CD4-tdGFP/+$; PR36, $UAS-PR36/+;ppk^{1a}>UAS-CD4-tdGFP/+$; GR36, $UAS-GR36/+;ppk^{1a}>UAS-CD4-tdGFP/+$). Orange dashed lines indicate border of VNC. Scale bar = 20 μ m.



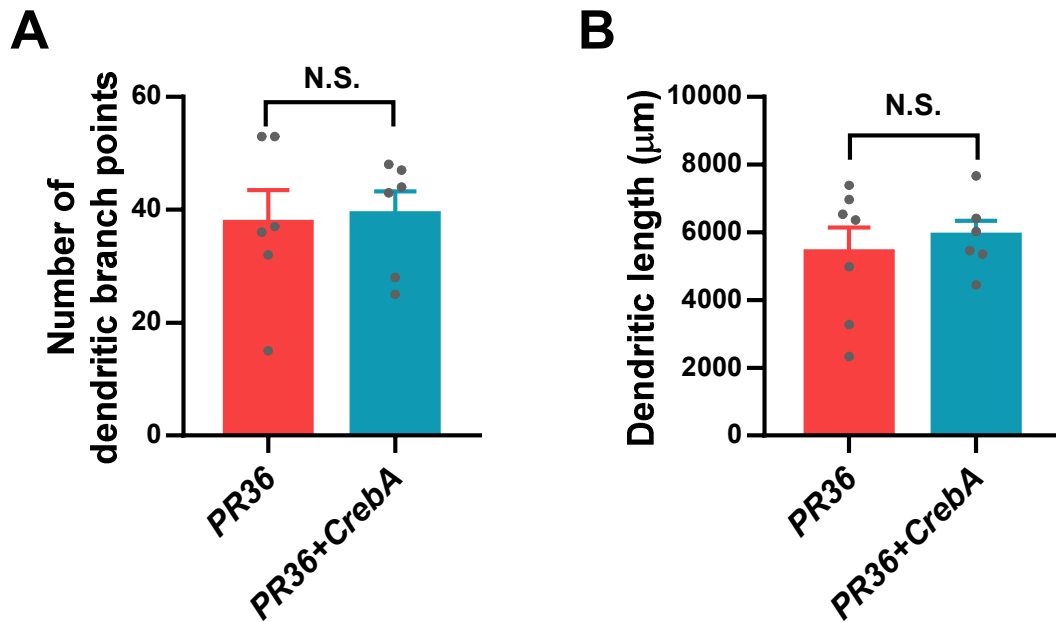
Supplementary Fig. S2. Alanine-rich DPRs do not impair PM supply. Representative CD4-tdGFP-labeled dendrite images (pseudo-colored) in C4 da neurons expressing the denoted transgenes (Genotype: Ctrl, $+/+;ppk^{1a}>UAS-CD4-tdGFP/+$; PA36, $UAS-PA36/+;ppk^{1a}>UAS-CD4-tdGFP/+$; GA36, $UAS-GA36/+;ppk^{1a}>UAS-CD4-tdGFP/+$). White arrowheads indicate soma of neurons. Scale bar = 20 μ m.



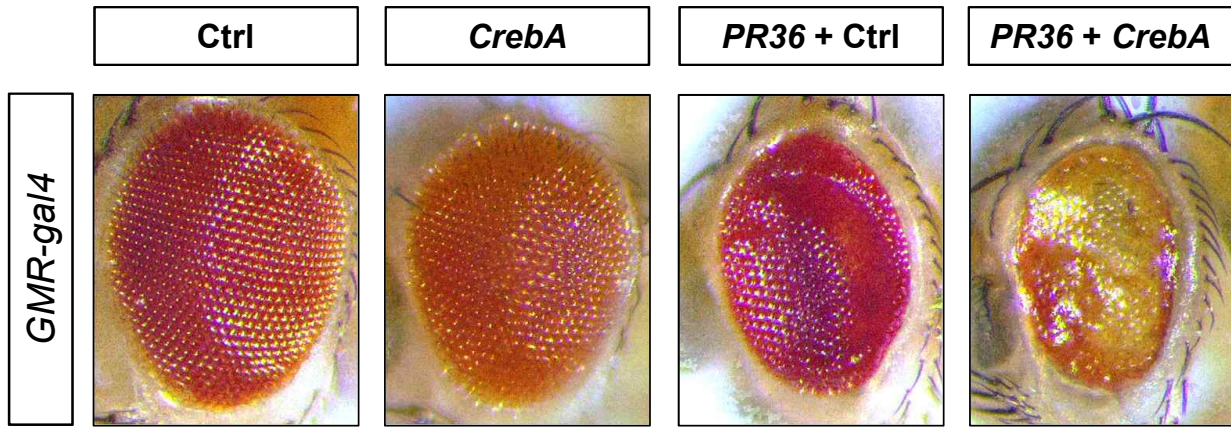
Supplementary Fig. S3. The number of GOPs is decreased by PR36 toxicity. (A) Representative images of GOPs (marked by *trans*-Golgi marker GaIT-RFP) in C4 da neurons of Ctrl or expressing *PR36* (Genotype: Ctrl, *UAS-GaIT-RFP/+;ppk^{1a}>UAS-CD4-tdGFP/+*; *PR36*, *UAS-PR36/UAS-GaIT-RFP;ppk^{1a}>UAS-CD4-tdGFP/+*). White arrowheads indicate GOPs. Scale bar = 10 μ m. (B) Quantification of the number of GOPs in C4 da neurons expressing the denoted transgenes described in [Supplementary Fig. S3A](#). **** $P < 0.0001$ by two tailed *t*-test; error bars \pm SEM; $n \geq 8$ neurons.



Supplementary Fig. S4. GR36 expression decreases the GOP number, but not the mRNA level of *CrebA*. (A) Representative images of GOPs (marked by *medial*-Golgi marker ManII-eGFP) in C4 da neurons of Ctrl or expressing GR36 (Genotype: Ctrl, *UAS-ManII-eGFP/+;ppk^{1a}>UAS-CD4-tdTOM/+*; GR36, *UAS-GR36/UAS-ManII-eGFP;ppk^{1a}>UAS-CD4-tdTOM/+*). White arrowheads indicate GOPs. Scale bar = 20 μ m. (B) Quantification of the number of GOPs in C4 da neurons expressing the denoted transgenes described in [Supplementary Fig. S4A](#). **** $P < 0.0001$ by two-tailed *t*-test; error bars \pm SEM; $n \geq 8$ neurons. (C) The amount of mRNA level of *CrebA* and 18S rRNA in the brain of Ctrl or expressing GR36 (Genotype: Ctrl, *+/+;elav-gal4/+*; GR36, *UAS-GR36/+;elav-gal4/+*). (D) Quantification of the mRNA level of *CrebA*. The values were normalized by those of 18S rRNA. N.S., not significant, $P = 0.9456$ by two-tailed *t*-test; error bars \pm SEM; $n = 3$ replicates.



Supplementary Fig. S5. *CrebA* overexpression is insufficient to restore the number of dendritic branch points and the length of dendrites in *PR36*-expressing neurons. (A) Quantification of the number of dendritic branch points in C4 da neurons expressing *PR36* or *PR36 + CrebA* (Genotype: *PR36*, *UAS-PR36/+;ppk^{1a}>UAS-CD4-tdGFP/+*; *PR36 + CrebA*, *UAS-PR36/UAS-CrebA;ppk^{1a}>UAS-CD4-tdGFP/+*). N.S., not significant, $P = 0.8374$ by two-tailed t -test; error bars \pm SEM; $n = 6$ neurons. (B) Quantification of the dendritic length of neurons expressing *PR36* or *PR36 + CrebA*. N.S., not significant, $P = 0.5974$ by two-tailed t -test; error bars \pm SEM; $n \geq 6$ neurons.



Supplementary Fig. S6. CrebA overexpression cannot restore the PR36-induced neurodegeneration in *Drosophila* retina. Representative retinal images of *Drosophila* eyes of Ctrl or expressing *CrebA*, *PR36* + Ctrl, or *PR36* + *CrebA* (Genotype: Ctrl, *GMR-gal4/UAS-empty*; *CrebA*, *GMR-gal4/UAS-CrebA*; *PR36* + Ctrl, *GMR-gal4>UAS-PR36/UAS-empty*; *PR36* + *CrebA*, *GMR-gal4>UAS-PR36/UAS-CrebA*). Fly retinas were imaged at 1 day after eclosion.