

Figure EV1. PAR-1 phosphorylates Drosophila tau.

A The indicated combinations of recombinant ^{FLAG}PAR-1 (isoform RR, wild-type, or kinase-dead K510A) from S2 cells and bacterially expressed GST-tau were incubated with ATPγS, and thiophosphorylated proteins were detected after alkylation with an antibody against a semisynthetic thiophosphate epitope (anti-hapten) (Allen *et al.* 2007).

B Phosphoassay with wild-type FLAG PAR-1 and the indicated GST-tau phosphomutants.





Figure EV2. Futsch/MAP1B distribution during c4da neuron dendrite pruning and effects of tau depletion on dendrite pruning.

A–D' Futsch/22C10 distribution in c4da neurons. Panels (A–D) show Futsch/22C10 staining, and panels (A'–D') show the merge with the c4da neuron marker (*ppk*>CD8GFP in A–C, tdtomato in D). (A, A') Control c4da neuron at the third-instar larval stage. (B, B') Control c4da neuron at 5 h APF. Futsch/22C10 is lost from proximal dendrites (arrows). (C, C') A c4da neuron expressing *par-1* RNAi at 5 h APF still shows strong dendritic Futsch/22C10. (D, D') A *par-1*^{Δ16} mutant MARCM c4da neuron at 5 h APF still shows strong dendritic Futsch/22C10.

E, F tau RNAi does not trigger precocious dendrite pruning at 5 h APF. Representative images of control c4da neurons (E) or c4da neurons expressing tau RNAi under the control of ppk-GAL4 (F) are shown.

Data information: Scale bars are 50 $\,\mu\text{m}$