



Figure S2 (Associated with Figure 3). Atx2, but not Nab2, robustly localizes to axonal lobes of the mushroom body in adult brains. To specifically assess protein localization in mushroom body neurons, tagged transgenic copies of Atx2 and Nab2 (Atx2-3xFLAG and Nab2-YFP) were expressed in female brains under the MB-specific *OK107-Gal4*. The lobes or axon tracts of the MBs are shown for a representative brain. False-colored panels show fluorescence corresponding to α -FLAG (red, Atx2-3xFLAG), the combination of α -GFP and Hoechst 33342 (green, Nab2-YFP and nuclei), and a merge of both channels. Atx2 localizes robustly to the axon tracts comprising the MB lobes, consistent with its cytoplasmic roles in translational regulation and mRNP granule formation. Fluorescence corresponding to Nab2 and Hoechst 33342 primarily localizes to the brain cortex—the site of the vast majority of neuronal cell bodies—consistent with a nearly exclusive nuclear localization of Nab2 in adult MBs.