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Supplemental Information

Glial-Specific Functions of Microcephaly Protein WDR62 and Interaction with the Mitotic Kinase AURKA Are Essential for *Drosophila* Brain Growth

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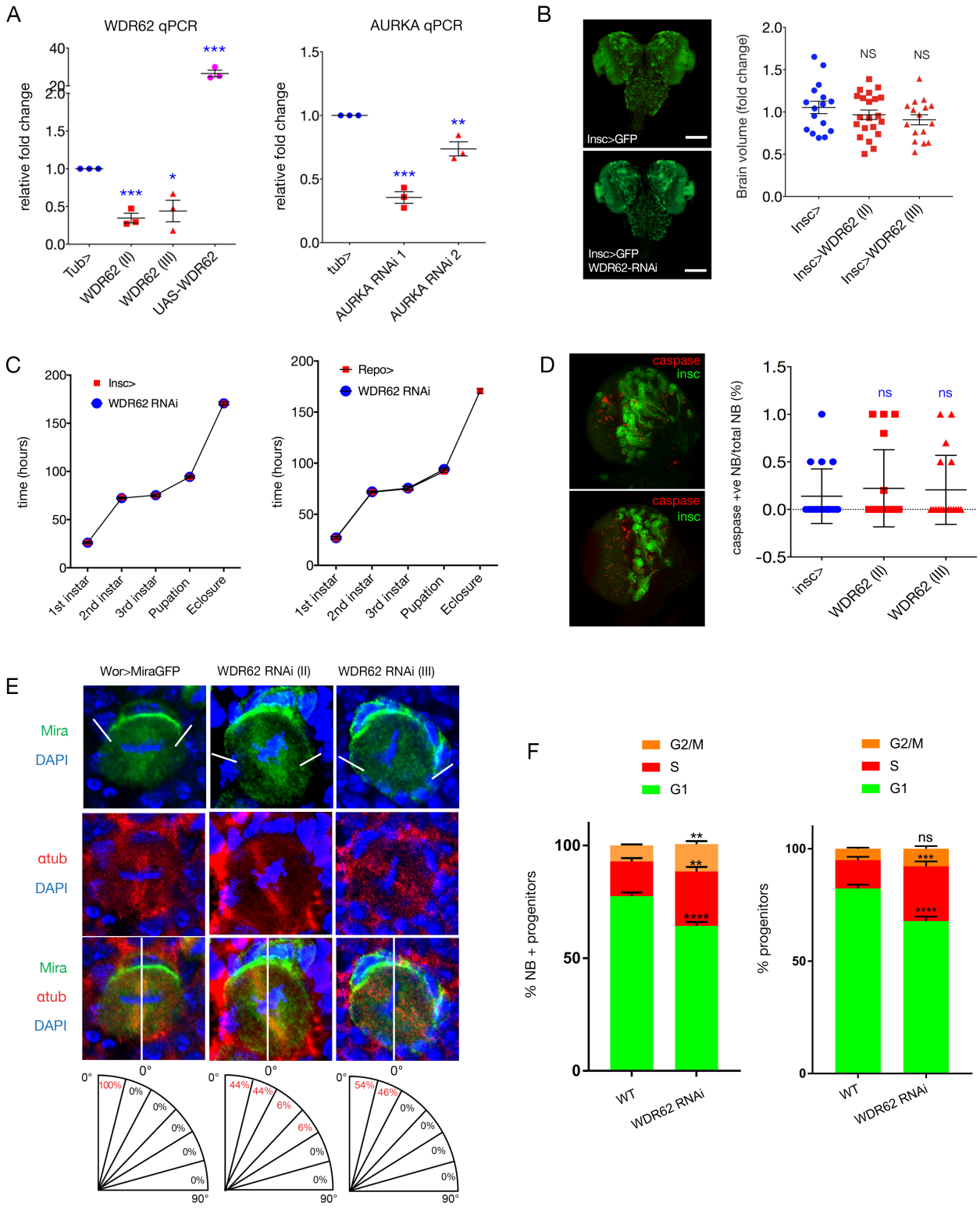
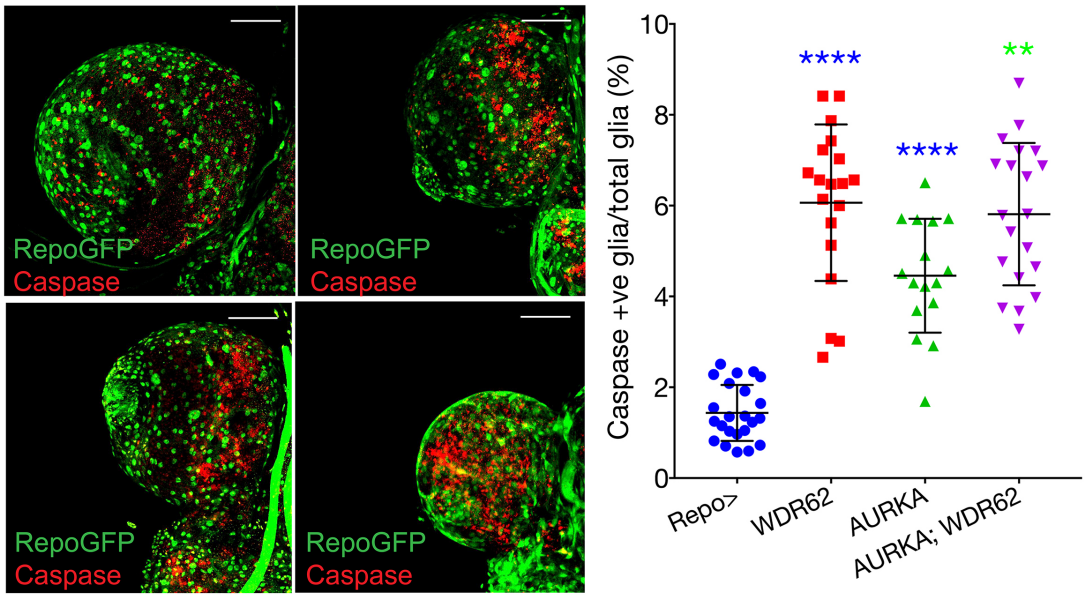
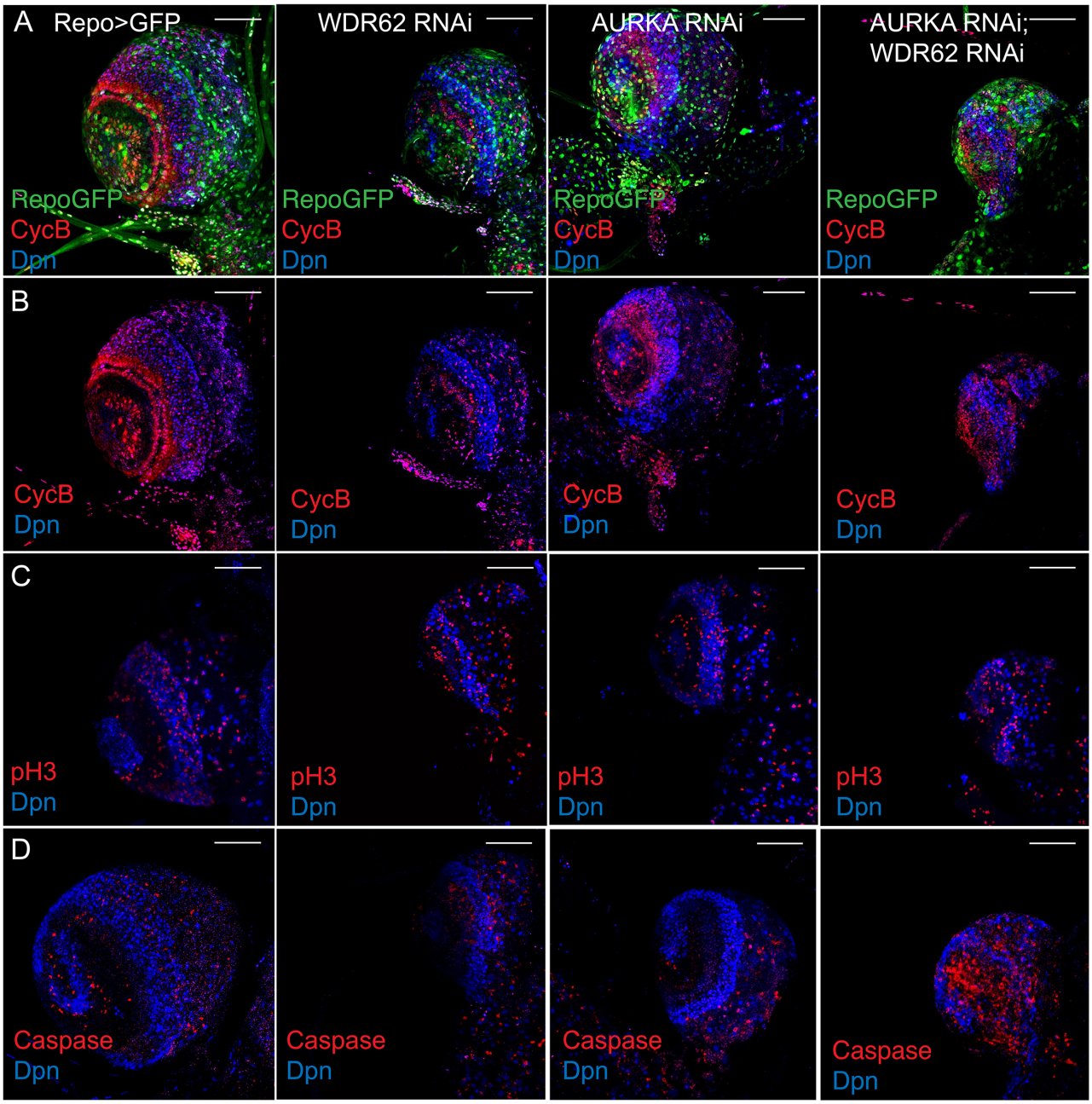


Supplemental Figure 1 A - Verification of wdr62 and aurkA RNAi knockdown - qPCR following WDR62 depletion using *Tubulin-GAL4* to drive either of two alternate *UAS-WDR62* RNAi lines to non-overlapping regions of *wdr62*. *Tubulin-GAL4* driven *AURKA* depletion with either of two independent *UAS-AURKA* RNAi lines. **B - WDR62 depletion in the neuroblast lineage does not alter brain size**. Volume analysis of *Insc-GAL4-GFP/+* and *Insc-GAL4-GFP/UAS-WDR62* RNAi third instar (96 hr) larval brains. **C - Developmental timing was not altered by depletion of WDR62**. *wdr62* knockdown driven in neuroblasts (Insc>) or glia (Repo>)

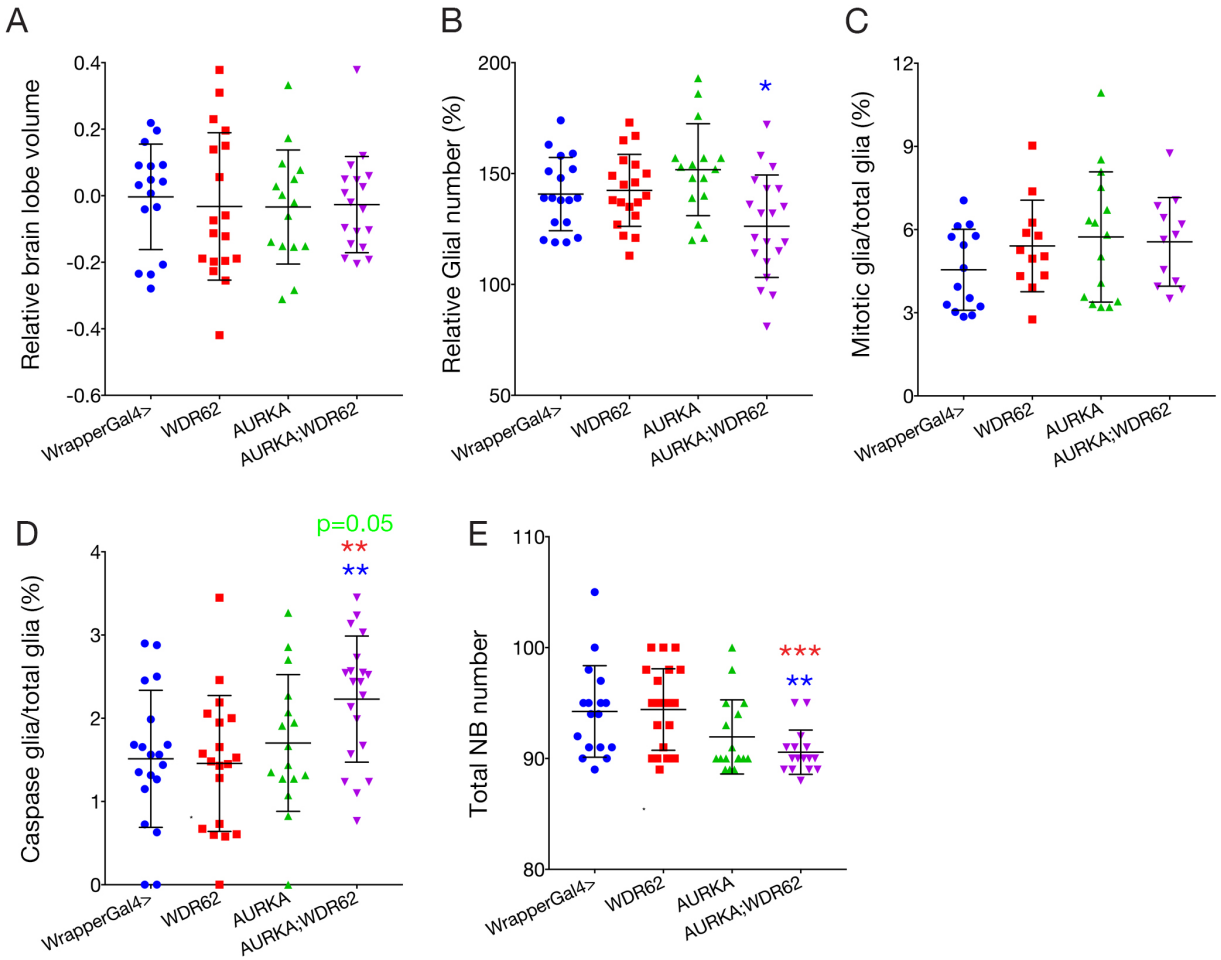
compared with control. **D - WDR62 depletion does not result in increased neuroblast death**. Representative brain lobe and quantification of caspase positive cells as a % of all NBs per brain lobe. **E - WDR62 knockdown is associated with mitotic spindle defects.** Mitotic spindles (α-Tubulin) and chromosomes (DAPI) relative to the basal crescent marker Miranda (Mira) for the control (*Wor-GAL4-miraGFP* /+) or following WDR62 knockdown (*WDR62* RNAi (II) or (III)). White lines mark the extent of each Mira crescent. The pie charts show distribution of spindle orientation. **F - WDR62 is required for neuroblast proliferation.** *Insc-GAL4*-driven *FUCCI* for control or the *WDR62* (III) RNAi. Cell cycle profiles for total Insc-G4 population (neuroblasts and progenitors) and progenitors in G1, S or G2M.



Supplemental Figure 2 – Cell death analysis of glia following *wdr62* and/or *aurka* knockdown in with *repo*-GAL4 lineage (genotypes and antibody staining as marked) (#brains: *Repo-GAL4*=23, si*WDR62*=19, si*WDR62*;si*AURKA*=21).



Supplemental Figure 3 – Cell cycle and cell death analysis of neuroblasts following *wdr62* and/or *aurka* knockdown in the glial lineage (genotypes and antibody staining as marked). For quantification see Figure 3.



Supplemental Figure 4 – Cell cycle and cell death analysis of following *wdr62* and/or *aurka* knockdown in the cortical glial lineage using *Wrapper*-GAL4 (genotypes as marked). (#brains: *Wrapper-GAL4*=18, si*WDR62*=18, si*WDR62*;si*AURKA*=19).