Investigating the Role of Dicer in Drosophila melanogaster Wing Development

Lee, Hannah

The nubbin gene is expressed in a proximal-distal pattern in the Drosophila wing. Using a genetic tool that recapitulates the nubbin pattern we decreased the expression of one essential gene: Dicer. The study focuses on the role of Dicer genes in Drosophila wing development. Preliminary data from examining the Drosophila wings indicates a significantly higher number of bristles/hairs on the wings with Dicer, which suggests an expansion of neural fates. To further substantiate this, I used immunohistochemistry with proneural genes that encode the transcription factor acheate. Transcription factors are proteins that bind themselves to certain sequences of DNA. The results of the immunohistochemistry showed an elevated expression of the genes, which was consistent with our preliminary data. In conclusion, we see that the loss of gene expression in Dicer leads to a change in neural fates, which we will further explore in the future.

Awards Won: