HANNAH C. WILLIAMS#, and CAROL Z. PLAUTZ, Department of Biology, Shepherd University, Shepherdstown, WV, 25443. **The effects of ldb1 dosage on the expression of dll1 and histology in the developing vertebrate eye.**

Ldb1 is a relatively new gene is the realm of eye development. Its role as a transcriptional cofactor is well-known, but its targets and direct effects on the developing optic cup, retina, and lens are still to be understood. This project uses Xenopus laevis as a model system of the vertebrate eye in studying the effects of knocking down or overexpressing the active truncation of the ldb1 gene to the eye. Ldb1 RNA or morpholino oligonucleotide, together with fluorescein dextran (FLDX), was microinjected into one dorsal cell at the 4-cell or 8-cell embryonic stages. This allows for an internally controlled mechanism of tracking the injection among the two sides of the embryos' developing heads.

In situ hybridization and histological sectioning was used to visualize the effects of the ldb1 manipulation on dll1, a candidate target of ldb1, and the structures of the eye. In preliminary results, dll1 expression in both the retina and neural tube of Stage 28-30 embryos appears to show a shift in expression in the injected areas. Altering the levels of ldb1 in the dorsal, animal hemisphere of the embryo appears to affect normal eye development; increase in ldb1 dosage appears to result in advanced eye development and an increase in neural tube and retinal dll1 expression. Further results of dll1 expression in ectoderm explanted from ldb1 RNA-injected zygotes will also give insight specifically to confirm the suggestion that dll1 is a possible direct target of ldb1 in the developing embryo.

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