

## Fetal Alcohol Syndrome Affects in Retinal Cell Gene Expression

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Alcohol exposure during fetal development has many adverse effects on embryonic cells, this is known as fetal alcohol spectrum disorder (FASD). Retinal cells are consistently affected by ethanol exposure in human patients. Zebrafish are an excellent model to use for studying FASD on, due to their similar developmental pathways to humans. This research aims to understand the changes that occur at the gene level to retinal cells during exposure to ethanol. To better understand changes that occur in retinal cells, a project was begun to examine GFP marked Zebrafish embryos exposed to ethanol [100, 150 mM EtOH], from 2-24 hours postfertilization (hpf), and eyes from treated and control zebrafish embryos will be harvested using dissection, dissociated using papain protease digestion, sorted using fluorescence activated cell sorting (FACS). These GFP labeled cells can then be used to isolate retinal cell RNA for gene expression analysis. This research will provide insight into gene expression changes during retinal development in specific cell types after alcohol exposure. Our goal is to understand the genesis of FASD birth defects caused by ethanol exposure, and this research will possibly identify methods to prevent or reverse the damage.

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