

TYLER P. HILL, and HOLLY RACINE, Dept of Biomedical Science, West Liberty University, West Liberty, WV, 26074, **Validation of an Avian Model of Induced-Thyrotoxicosis**

This project aimed to validate the avian model developed in our lab with the ultimate goal of discovering the potential link between maternal hyperthyroidism and craniosynostosis (CS). The method of validation for this model was to qualitatively measure the levels of thyroxine (T<sub>4</sub>) present in the treated embryos systems at different time points post-injection. T<sub>4</sub> was fluorescently labeled using Alexa fluorophore 488 and was injected into an experimental group of N=37 on embryonic day 11 (E11). Three control groups were used one N=9 Saline injected, another N=5 injected with the unconjugated free dye, and lastly N=5 T<sub>4</sub> injected only. The results showed that after 24 hours post-injection the fluorescent tag was present in the albumen with a peak at 72 hours, after 48 hours fluorescence is detected in the yolk with a peak at 96 hours, finally after 72 hours there is a large peak in the blood before becoming undetectable at 96 hours. These trends suggest the injection is traveling from the injection site through these tissues and ultimately into the blood stream, which is supported by the molecular assaying via ELISAs previously conducted. The results of this project in conjunction with the ELISA data show that the peaks detected are from injected T<sub>4</sub> rather than a natural spike in development. Prior physiological data collected supports that the T<sub>4</sub> injection not only makes its way into the blood stream but also has a metabolic effect leading to changes in development. These results combined validate this model of induced thyrotoxicosis.

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