Regeneration of the Annelid *Aeolosoma*

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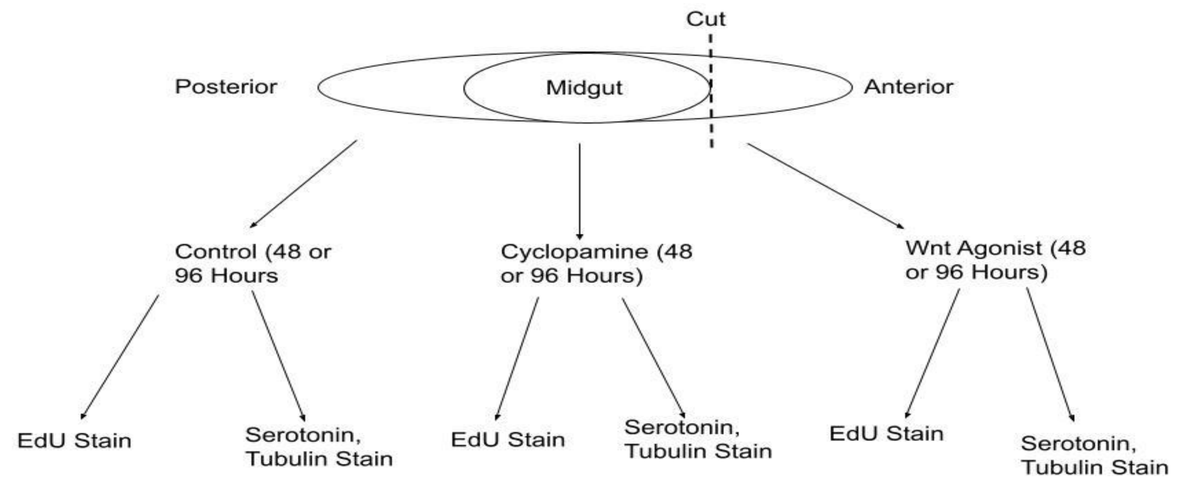
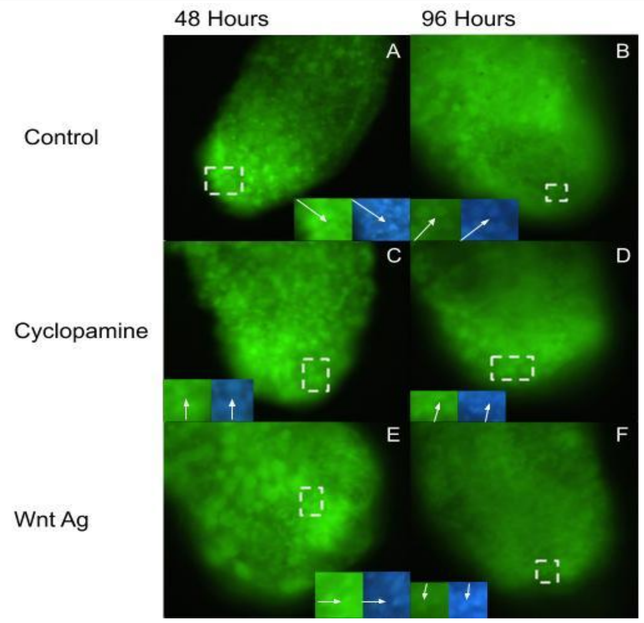
Backround Info

Aeolosoma are freshwater aquatic annelid worms. *Aeolosoma* possesses considerable regenerative capacity and is easy to maintain in a laboratory setting. We explored a range of molecular techniques to explore the feasibility of *Aeolosoma* as a model system. Specifically, we developed techniques to explore cell proliferation (EdU) and immunohistochemistry. We then used small molecule inhibitors to explore the role of Wnt and Hedgehog signaling during regeneration of *Aeolosoma*.

Results





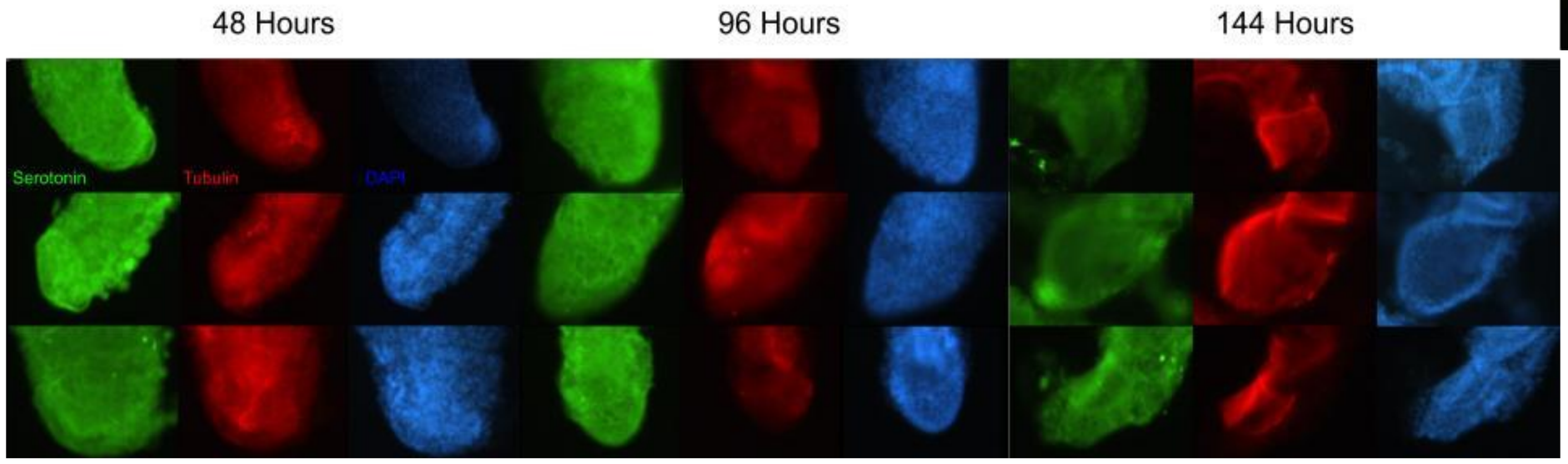


Figure 1. Edu stains in each solution after 48 and 96 hours with DAPI stain comparison.

Methods

- Samples were cut before the midgut on the anterior side. They were then set in either a control environment, or a solution containing either Wnt Agonist or Cyclopamine for either 48, 96, or 144 hours.
- Cell proliferation was observed by labeling cells with a thymidine analog 5-ethynyl-20 -deoxyuridine (EdU), which is bound to DNA during S-phase of the cell cycle
- We also viewed fluorescent stains of the animals using serotonin and Tubulin staining.

Conclusions

- We were able to get all of the procedures to work on a new species.
- The Wnt Agonist and the Cyclopamine both affected cell proliferation, as we can see in the EdU stains
- As seen in the triple stains, the Wnt Agonist and the Cyclopamine has an effect on serotonin and tubulin staining.

Acknowledgements

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