Assessment of the Effect of Microcystin on Cellular Regeneration of Dugesia dorotocephala

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Water pollution poses a significant threat to aquatic ecosystems and human health. Sometimes chemical pollutants force algae to grow unstoppably and produce toxins, such as microcystin. Certain types of blue-green algae are more likely to produce toxins more than other, cyanobacteria for example are able to do this as well as absorb sunlight and oxygen which deprives aquatic organisms from receiving essential nutrients, certain bodies of water are more likely to grow larger amounts of bacteria due to runoff, or other pollutants, this is why there were varying amounts of cyanobacteria when dosing Dugesia. The model organism was maintained in limited but controlled conditions to where their growth after dosing with cyanobacteria was observed throughout the project. After dosing with cyanobacteria, the model organisms were cut after specified exposure periods. Preliminary results indicate potential effects of excessive algae growth on the planarian's ability to regrow proportionate to their initial length, exposure to the bacteria also showed significant efforts of shrinkage which illustrated the limitations the planarians had when aiming to regrow their pharynx in order to digest nutrients. For future research it would be beneficial to measure how long it takes for this model organism to fully regrow their pharynx after being cut, as well as finding new ways to mark individual sections of planarians to be able to identify each organism amongst others, this would also help prevent fission.

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