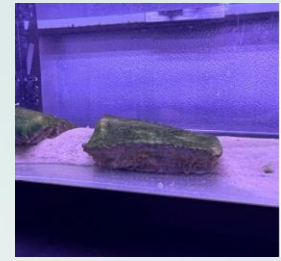


The Extracellular Matrix of Benthic Cyanobacterial Mats

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OBJECTIVE

RESEARCH QUESTION

What are is the extracellular matrix of benthic cyanobacterial mats?

GOAL

Using three different dyes (Congo Red, Fluorescent Brightener 28, and Aniline Blue) to determine the extracellular matrix of benthic cyanobacterial mats and understanding what the mats compose.

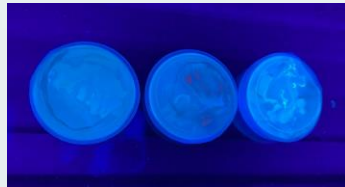
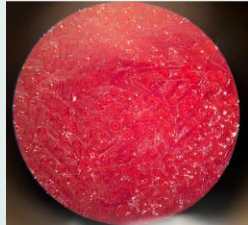
PURPOSE/IMPORTANCE

Benthic cyanobacterial mats are complex communities of microorganisms dominated by cyanobacteria. They impact coral reefs and various other aquatic systems through their continued expansion. There isn't much information on how the mats proliferate the way they do and their composition. To understand what drives their proliferation, we need to recognize what they are composed of.



RESULTS

- Through the dyes, we were able to determine that cellulose appears to be present in the extracellular matrix of benthic cyanobacterial mats.
- These results are important to our research because it gives a better understanding of how the mats function. It also gives us more information on the mats because there isn't much out there, so it opens doors for more research.
- This is important to the general audience because it is something that affects our environment. People should be informed of what is happening to the environment as it will affect them too.



We can see that **the colonies on the Congo Red plate were stained red (left), and the colonies on the Fluorescent Brightener plate were fluorescent under a UV microscope (right)**. Since cellulose is one of very few carbohydrates that would bind to both these dyes, we can say with confidence that it is present within our mats.

