
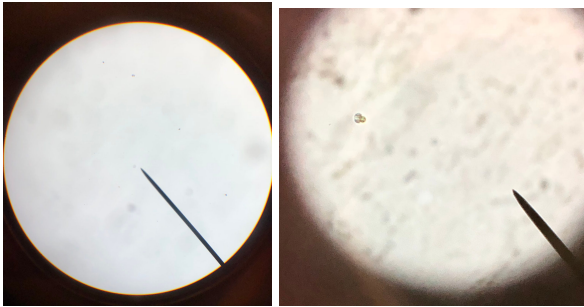

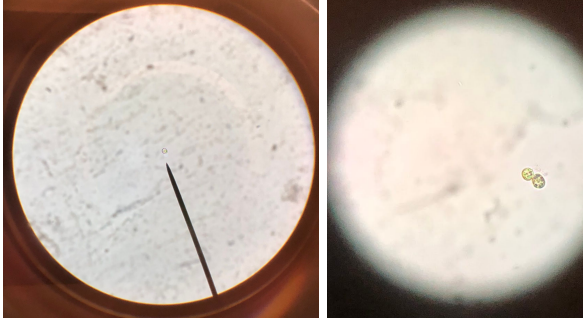
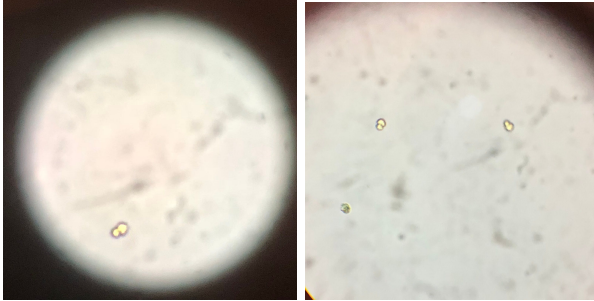
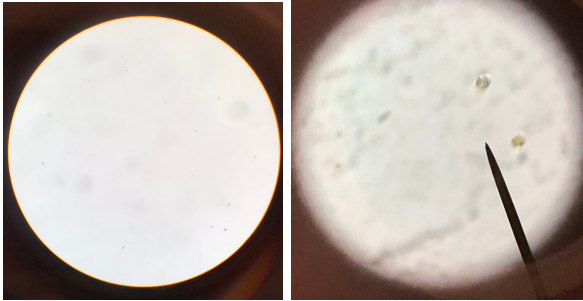
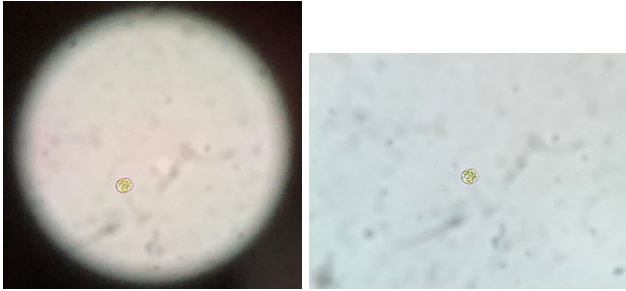


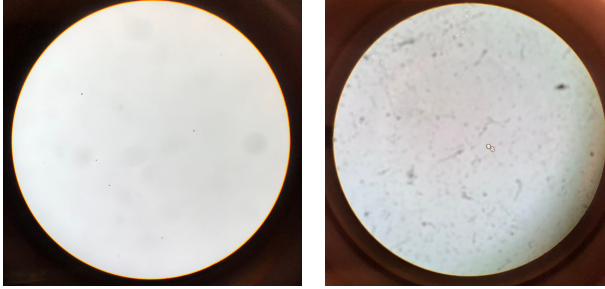
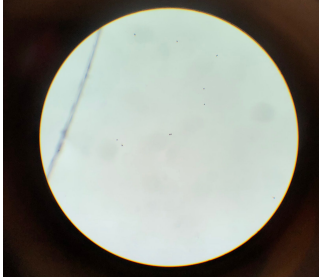
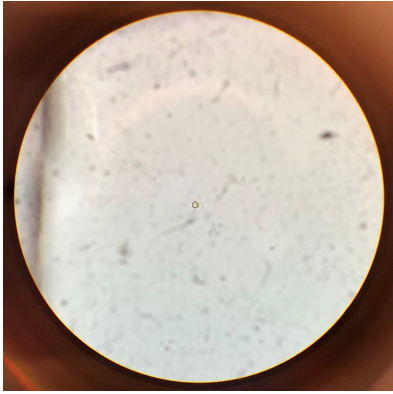
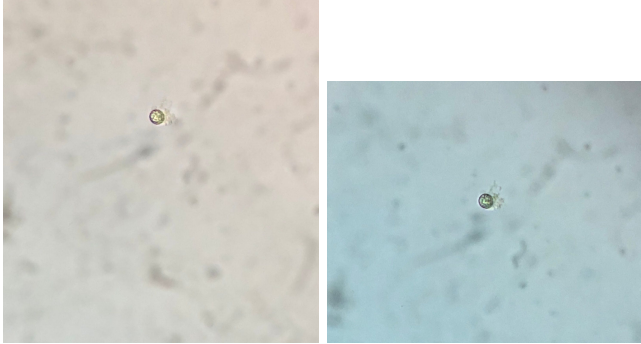
Name: Kennex Lam

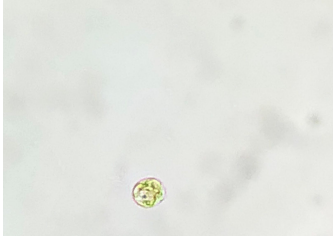
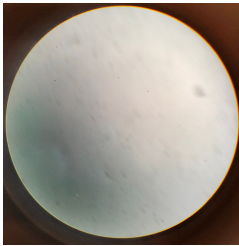
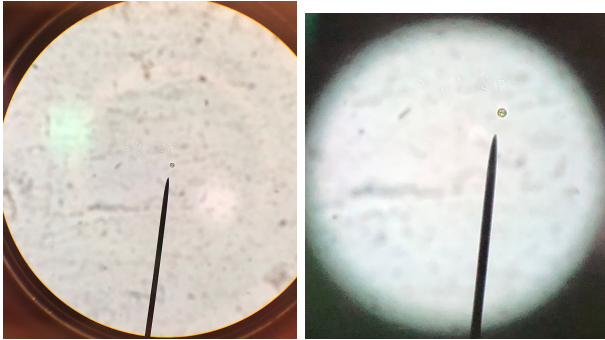
Date: 7/8/19

S. Microadriaticum

<p>Stock</p> 	<p>Nearly all are spinning around in circles. Few swimming around. A couple of the dead ones are clumped together.</p>
<p>F2 10 mL</p> 	<p>A few are swimming in loops while majority are spinning in circles. This one swimming is what the usual motile Symbiodinium microadriaticum looks like (a mushroom shape). Higher concentration than the first and second week of culture.</p>
<p>F2 25 mL</p> 	<p>About $\frac{1}{3}$ were dead (non-moving) while the rest were spinning in circles. This one was spinning.</p>
<p>F2 75 mL</p>	<p>Nearly all are spinning in place. Some are non-moving. Saw the flagella moving on this first one. The second photo are two dead Symbiodinium which were clumped together.</p>

	
<p>ASP-8A 10 mL</p> 	<p>Most spinning around in circles fast. A few were looping while swimming. Higher concentration compared to last week. This media seems to now perform about the same as F2. Photo of 2 spinning algae and 1 swimming algae.</p>
<p>ASP-8A 25 mL</p> 	<p>Majority spinning in circles. Few are dead. Some swim in zig zags while are . There is a much higher concentration of them today. In the photo, one was spinning and one was swimming by flipping forward.</p>
<p>ASP-8A 75 ml</p> 	<p>Many were swimming either by zig-zagging or looping. So the F2 media may grow the Symbiodinium faster but at a shorter time until it hits its peak. The ASP-8A may take longer to culture, but they endure longer.</p>
<p>L1 10 mL</p>	<p>Many of them are swimming in loops and normally. They have grown since last week.</p>

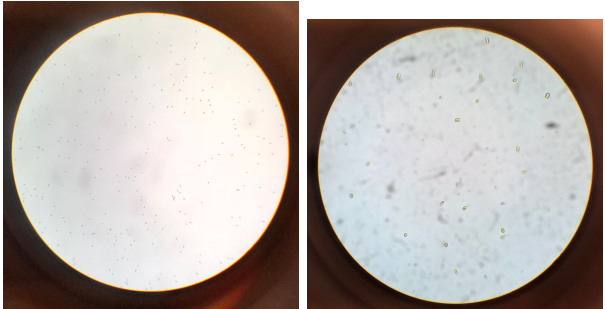
	
<p>L1 25 mL</p> 	<p>A few are swimming normally or dead. Most are spinning in circles.</p>
<p>L1 75 mL</p>  	<p>3 were dead. Some were swimming or spinning. The 3 images are all the same Microadriaticum. I found these tiny dots attached to them which may be the organelles of another microadriaticum that could have burst.</p>
<p>L1 + F2 10 mL</p>	<p>There was growth as the concentration is higher. Some were dead but the rest were spinning in circles. Two were swimming normally.</p>

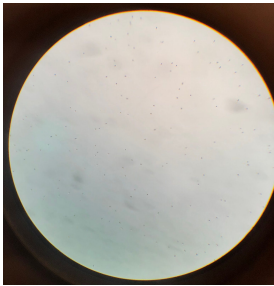
	
<p>L1 + F2 25 mL</p> 	<p>Many spinning in circles really quick. A few are swimming. Some were dead.</p>
<p>L1 + F2 75 mL</p> 	<p>A couple are swimming in loops. Some are spinning in circles or swimming normally.</p>

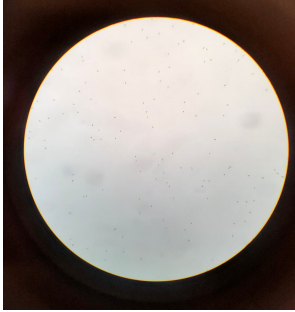
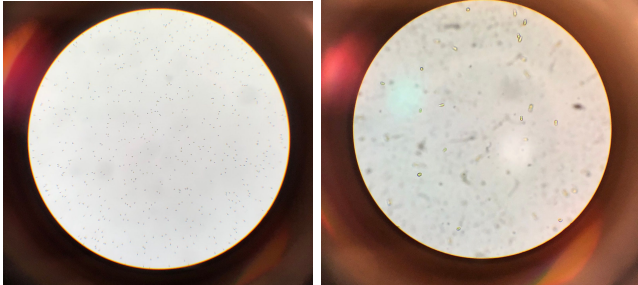
* Planning to make new cultures of *S. microadriaticum* today. So far, grinded dead corals pieces will be added into a new media, solid media plates, and ASP-8A with seawater are planned.

* "Excess nitrogen and phosphorus cause an overgrowth of algae in a short period of time, also called algae blooms." So the F2 media may have an excess nitrogen and phosphorus, so the Symbiodinium could have a quick growth and then hit its peak.

D. Tertiolecta

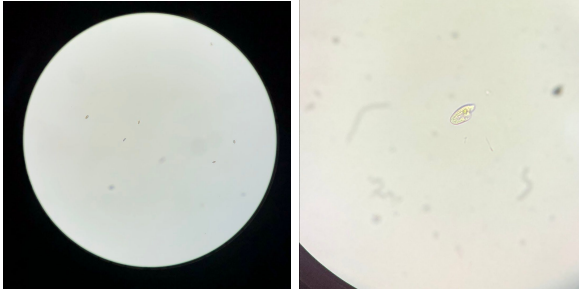
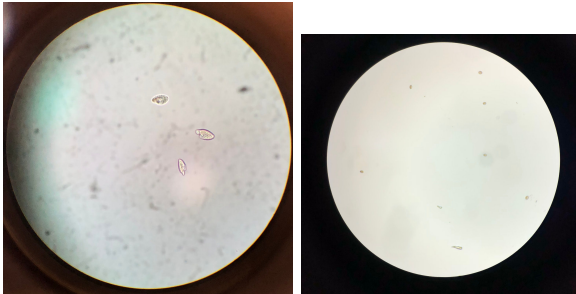
<p>Stock</p> 	<p>Majority are swimming around while some are shaking in place. A few were non-moving. In the photo, the dead or non-moving <i>dunaliella tertiolecta</i> seem to have a more circular shape while the motile ones are ovular.</p>
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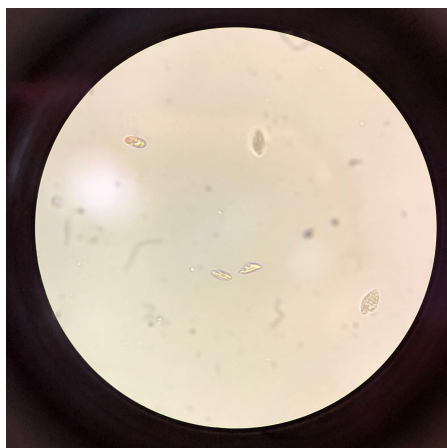
<p>F2 10 mL</p> 	<p>Much less lower concentration compared to the 10 mL ASP-8A solution. Majority of them are shaking in place. Few are swimming or dead.</p>
<p>F2 25 mL</p> 	<p>Two were shaking. Most were shaking in place.</p>
<p>F2 75 mL</p> 	<p>Half swimming, half shaking. Few are dead.</p>
<p>ASP-8A 10 mL</p> 	<p>Majority are still swimming while a couple are shaking in place.</p>
<p>ASP-8A 25 mL</p>	<p>Half swimming. Half shaking.</p>

	
<p>ASP-8A 75 ml</p> 	<p>$\frac{2}{3}$ shaking. $\frac{1}{3}$ swimming.</p>

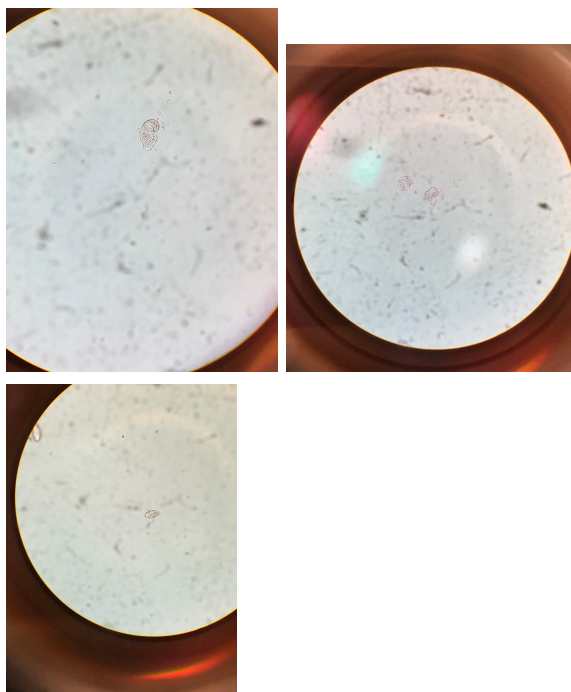
* The 75 mL ASP-8A *Dunaliella tertiolecta* will be placed in its corresponding new media today. The 10 and 25 mL will no longer be observed and be used to feed *O. marina*.

O. Marina

<p>Stock</p> 	<p>All swimming. Light green</p>
<p>F2 10 mL</p> 	<p>Higher concentration compared to two weeks ago. All swimming fast. If you look at the different <i>O. marina</i>, they seem to have different shapes.</p>



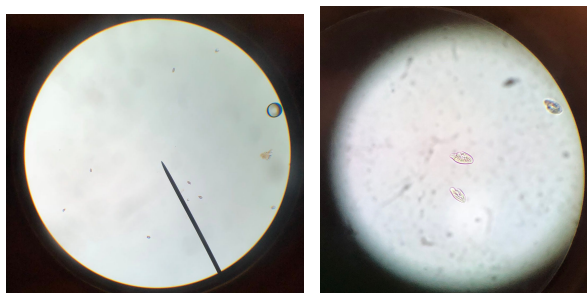
F2 25 mL



Much less concentration compared to the ASP-8A solutions and F2 10 mL. In the photo, I found a non-moving *O. marina* and observed it. It burst when I tried to take a photo then split into two.

The third photo is of another *O. marina* that swam earlier and then became immobile.

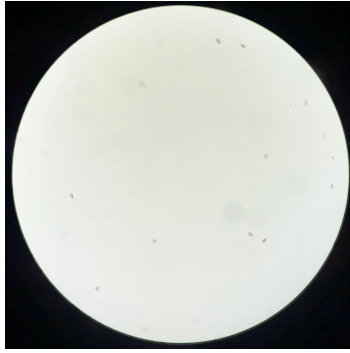
F2 75 mL



All swimming really fast.

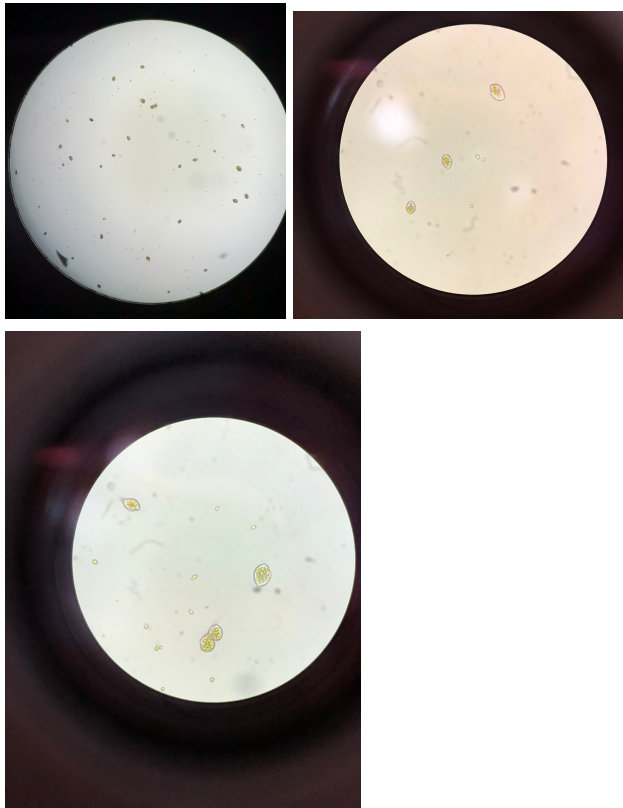
ASP-8A 10 mL

No overgrowth of *dunaliella* in this solution. *O. marina* are slightly dark



and swimming fast.

ASP-8A 25 mL



Overgrowth of *D. tert.* The *O. marina* look dark and big.
 The first photo shows both *D. Tert* and *O. marina*.
 The second photo depicts an up close image.
 The third photo contained an image of an *O. marina* that may have been in the middle of cell division.

ASP-8A 75 ml

Much higher concentration of *dunaliella* than *O. marina*. The *O. marina* are all bumping into the *dunaliella* and swimming away fast.

