**Junior Mini PAM Protocol**

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1. Plug Junior Mini PAM into the computer and insert the fiber into the black port gently until the plastic guide has been reached. Do not force further. Hand-tighten the screw (hard tightening will break the fiber).
2. Place the black guide on the other end of the fiber, and gently hand-tighten (this is what keeps the fiber optic cable a standard distance from the surface of the coral).
3. Start the PAM software
4. Select F from the drop-down menu at the top-left corner of the ‘Chart’ tab
5. On the ‘Chart’ tab, select Fo’ – Mode
6. Set Gain to 2 on the ‘Settings’ tab.
7. Select ‘record online’ at the top of the ‘Chart’ tab
8. Click Autoscale button on the ‘Chart’ tab if you can’t see the fluorescence trace. Sometimes not necessary.
9. When you are ready to make a measurement, hold the black guide on the surface of the coral for at least 5 seconds, or until you see the Fo measurement stabilize.
10. Click SAT button once the Fo measurement is stable. This shines the saturating pulse of light on your sample and provides a measurement of Fm.

Tips

* I created new records to separate measurements in different tanks, treatments, etc. This makes it easier to assign nubbin ID’s to values later on.
  + You can do this on the ‘Chart’ tab, under Val. click to the Rec. box. You should see buttons for New Record and Delete Record. Click New Record, which will separate your measurements by record under the ‘Report’ tab.
* The published literature for *Astrangia poculata* Fv/Fm values is slightly less than that of tropical corals. For example, Burmester et al. (2017) reported values of Time 0 symbiotic *A. poculata* fragments between 0.4 and 0.5. I observed similar values, but still have more data to analyze. Note: you will still see an Fv/Fm signal in aposymbiotic *A. poculata,* but you are likely measuring mostly endolithic algae.
* I did not need to make a map of my fragments because I was measuring Fv/Fm of corals in respirometry chambers, but maps are an efficient way to keep track of the order of fragments measured.
* I dark-adapted *Astrangia poculata* for at least 30 minutes before making a measurement.
* We place the fluorometer on a box or stand that holds it above the water level of the tank. We move the fluorometer to the different tanks instead of bringing corals to the instrument. DO NOT let water drip down the fiber optic cable and into the fluorometer while moving between tanks.
* I save the data in 2 different ways. Under File, I Save Data. Additionally, under the ‘Report’ tab click on Options and then Export All. This way you have your data in both the WinControl software format and as an Excel spreadsheet.