

General Aiptasia husbandry - Weis Lab

OSU Weis Lab

Abstract

This protocol describes how Aiptasia stocks are cared for in the Weis lab. The protocol was last updated in 2018. Most students and postdocs that have been in the Weis lab have contributed to this protocol in some form or another, and they are too numerous to list.

Citation: OSU Weis Lab General Aiptasia husbandry - Weis Lab. **protocols.io**

dx.doi.org/10.17504/protocols.io.rihd4b6

Published: 23 Jul 2018

Before start

For basic Aiptasia care, the ability to control lighting and temperature are necessary. Aiptasia are hearty creatures, and can tolerate living in a normal fish aquarium or in small plastic food dishes. Just like with other marine life, good water quality is crucial for survival.

Protocol

Basic Needs

Step 1.

Light Levels:

- Symbiotic Aiptasia: 10-40 μ mol photons /mm²s
- Aposymbiotic Aiptasia: 0 μ mol photons /mm²s (store in the dark, or in dark containers; can be brought out in the light for feeding and cleaning)

📌 NOTES

We have a variety of lights in our incubators, LED strips to fluorescent tube lights. It shouldn't really matter the type of bulbs that are used, so long as the white light is at least 10000K.

Basic Needs

Step 2.

Artificial seawater (ASW):

- Artificial seawater is mixed in the lab. Advantages of using artificial seawater are that the salinity can be easily controlled and the water can be easily kept free of harmful microbes.
- Salinity of 33ppt (as read on a refractometer) and a pH of 8.0 is desired.
- Seawater is mixed according to manufacturer's instructions. We mix big batches of seawater in a 32-gallon (121L) container, with a submersible pump on the bottom helping to circulate the water. Once the water has reached the desired salinity, it is pumped out to 5-gallon (19L) carboys for storage. These carboys are used for all ASW needs in the lab.
- If possible use RO/DI water for mixing the ASW. Tap water usually contains heavy metals that are harmful to marine invertebrates.

📌 NOTES

Our 32-gallon container is a Brute trashcan. These are really durable, easy to clean, and highly affordable.
<http://www.rubbermaidcommercial.com/rcp/brute/products.jsp>

The salt we use is Instant Ocean salt mix.
<http://www.instantocean.com/Products/Sea-Salt-Mixes/sea-salt-mixture.aspx>

Basic Needs

Step 3.

Temperature:

- Stocks are generally kept between 20-26°C, ideally 25°C.
- Stocks used for spawning are mostly kept at 29°C (see spawning protocol)

Basic Needs

Step 4.

Storage:

- For raising back-up stocks, or large numbers of anemones that aren't going to be used periodically, small aquariums (2.5 - 10 gallons) can be used. Make sure there's good flow with a powerhead, or a large airstone. A filter helps keep the water clean, and reduces the number of cleanings that have to be done.
- Small plastic food containers are good for maintaining low numbers of different clonal lines or experimental groups. Don't overcrowd them. We use the small plastic food storage containers from Cambro; they have a large variety of container sizes as well as black ones that can be used to keep the light out for the aposymbiotic anemones.

📌 NOTES

Cambro Camwear® line of plastic storage containers
https://www.cambro.com/Products/Food_Pans_and_Lids/10737419403/1033.aspx

Basic Needs

Step 5.

Feeding:

- The best food source to use, with minimal upkeep and low costs, are brine shrimp. These can be obtained through online vendors (e.g., Premium brine shrimp eggs from Brine Shrimp Direct).
- Feed anemones at least 3 times a week. To maximize feeding, the container of anemones can be saturated with brine shrimp.
- Be careful not to allow old food to stay in the containers, as this will quickly foul the water (especially in the smaller containers).
- Increasing the number of days a week of feeding should increase the growth rate of the anemones.

📌 NOTES

Brine Shrimp Direct
<https://www.brineshrimpdirect.com/>

Basic Needs

Step 6.

Cleaning:

- Clean after feeding (wait at least 1 hr, but preferably > 3 hr, and no longer than 8 hr), with additional water changes if necessary.
- Water can simply be dumped, just look out for any detached anemones and try not to lose them.
- Use cotton swabs to clean algae off the surfaces of containers. Avoid disturbing anemones and pedal lacerates. Sometimes swabbing isn't necessary at all (especially for apos), and you can simply dump and replace the water.

NOTES

If you see any dying/unhealthy anemones, isolate container and clean water. Causes can be hypoxia, salinity, temperature, bleach contamination, or accumulation of microbes on waste food or dying anemones.

Example weekly schedule for general Aiptasia stocks

Step 7.

Monday morning:

- Feed Aiptasia with brine shrimp.
- Make new batch of brine shrimp, to be harvested on Wednesday.
- Spot check Aiptasia containers, looking for any unhealthy/dying anemones.
- Test salinity in back-up stock aquariums, adjust accordingly.

Example weekly schedule for general Aiptasia stocks

Step 8.

Monday afternoon:

- Clean all Aiptasia containers and replace the water with new ASW.
- Start batch of ASW in 32-gallon container.

NOTES

If containers are becoming covered in algae that is hard to swab off, then move the anemones to a new container and start bleaching the old container.

Example weekly schedule for general Aiptasia stocks

Step 9.

Tuesday:

- Distribute ASW to carboys for storage, and start new batch of ASW in 32-gallon container.

Example weekly schedule for general Aiptasia stocks

Step 10.

Wednesday morning:

- Feed Aiptasia with brine shrimp.
- Make new batch of brine shrimp, to be harvested on Friday.
- Spot check Aiptasia containers, looking for any unhealthy/dying anemones.

- (If not done on Tuesday) Distribute ASW to carboys for storage, and start new batch of ASW in 32-gallon container.

Example weekly schedule for general Aiptasia stocks

Step 11.

Wednesday afternoon:

- Clean all Aiptasia containers and replace the water with new ASW.

Example weekly schedule for general Aiptasia stocks

Step 12.

Thursday:

- Distribute ASW to carboys for storage, and start new batch of ASW in 32-gallon container. Rinse and wipe down 32-gallon container with DI water.

Example weekly schedule for general Aiptasia stocks

Step 13.

Friday morning:

- Feed Aiptasia with brine shrimp
- Make new batch of brine shrimp to be harvested on Monday. (alternatively, this can be done on Saturday if necessary)
- Spot check Aiptasia containers, looking for any unhealthy/dying anemones.
- (If not done on Thursday) Distribute ASW to carboys for storage, and start new batch of ASW in 32-gallon container. Rinse and wipe down 32-gallon container with DI water.

Example weekly schedule for general Aiptasia stocks

Step 14.

Friday afternoon:

- Clean all Aiptasia containers and replace the water with new ASW.

Bleaching containers and carboys

Step 15.

- Occasionally chlorine bleach should be used to remove encrusted algae in Aiptasia containers and possibly ASW carboys.
- Let the containers soak in a 10% bleach solution overnight. Scrub the containers to remove algae.
- Rinse in DI water over the course of 2-3 days, replacing the water every day. Water conditioner should be added to at least the final rinse to help remove any lingering chlorine and chloramine ions.