Rotifers

A CAROLINA™ CareSheet

Immediate Care and Handling

When your rotifer culture arrives, immediately open the shipping container, remove the jar, and inspect the culture. Once you verify that the shipment is intact, loosen the lid on the jar. Aerate the culture to replace oxygen depleted during shipment. Place the tip of the pipet (included) into the culture water, squeeze the bulb, and bubble air into the water. Withdraw the pipet and release pressure on the bulb, allowing it to refill with air. Repeat about 4 times.

Sampling and Observing

Although rotifers are multicellular animals, they compare in size to unicellular protozoans and are only observable with a microscope. Allow the rotifers to settle for 15 to 20 minutes after aeration, and then inspect the culture using a stereomicroscope and low illumination. This method of observation enables you to locate where the rotifers concentrate, which is where food is abundant. These areas are visible as fuzzy debris in the culture. In preparing slides for viewing, have students sample from those areas. Using a stereomicroscope and pipet, students can easily pick up a single rotifer or a group of rotifers for a slide.

To take a sample, squeeze the pipet bulb before inserting the pipet into the culture. Release the pressure on the bulb when the pipet's tip is close to a concentration of rotifers. As the sample is pulled into the pipet, keep the pipet vertical to avoid stirring the culture and scattering the rotifers. Do not squirt the pipet water back into the culture.

One drop should contain more than enough rotifers for a slide mount. After adding a coverslip, examine the slide using the microscope's lowest magnification. The animals may be free-swimming, or they may temporarily attach to debris and feed by using the cilia around their heads to sweep bacteria and other food particles into their mouths. If you locate attached rotifers, use high magnification to observe them in detail. If you find only swimming rotifers, add a drop of Protoslo® (item #885141) to a drop of culture on a slide, mix well, add a coverslip, and observe.

Culturing and maintaining

The freshwater rotifers *Philodina* and *Monostyla* easily culture on wheat medium. You will need culture dishes, boiled wheat grains (item #132425), and springwater. Place 3 to 4 wheat grains into a culture dish and cover with 200 mL of springwater. Leave this undisturbed overnight before inoculating with rotifers. Subculture every 2 to 3 weeks to maintain the culture. N**ote:** *If you are using collected springwater or pond water, pasteurize it before use by heating to 90°C. The exact temperature is not critical, but it is important that the water NOT boil. Allow the springwater to cool to room temperature before inoculating. Bottled springwater does not need pasteurizing.*

The culture of our marine rotifer (item #162860) is more demanding because you must first culture marine algae as a food source. Inoculate 150 mL of Alga-Gro® Seawater Medium (item #153754) with either *Platymonas* (item #152475) or *Stephanoptera* (item #152568). Place under cool-white fluorescent lights until a dense green color develops, usually in 4 to 7 days. Inoculate with 50 to 100 marine rotifers and maintain under lights. As the rotifers consume the algae, the water will clear. When this happens, transfer 50 to 100 rotifers to a new algae culture.

FAQ's

How long can I keep my cultures before using them?

If possible, use them within 2 to 3 days of receipt. The longer you delay, the more likely the cultures will spoil, be overturned, etc.

Will the cultures last longer if I place the jars in a refrigerator?

We do not recommend refrigeration or rapid temperature changes. Both may kill the organisms.

Are rotifers dangerous?

No, rotifers are not parasitic or pathogenic. Even so, know and follow your district's guidelines so you are prepared if a student ingests a culture.

My cultures arrived today (Friday) and I need them for class Monday. Will they be OK?

Remove the cultures from their shipping container and care for them as directed in the "Immediate care and handling" section, and they should be fine. You may even discover that the cultures improve a bit because they have time to recover from shipping.

My students are not finding any rotifers. What can I do?

Perhaps the culture was agitated, scattering the rotifers. If finding rotifers is a problem, ensure that students are following the sampling procedure as described in the "Sampling and observing" section. If necessary, have students re-examine the culture under a stereomicroscope to locate a concentration of rotifers and direct them to sample there.

We used Protoslo® but now the rotifers are all at the edge of the coverslip and some were squeezed out from under the coverslip completely. What is wrong?

If Protoslo® and culture water are improperly mixed, the thicker Protoslo® will displace the water and rotifers when the coverslip is added. Clean the slide and start over, mixing the Protoslo® and culture water thoroughly before adding the coverslip.

Problems? We hope not, but if so contact us. We want you to have a good experience.

Orders and replacements: 1-800-334-5551, then select Customer Service.

Technical Support and Questions: caresheets@carolina.com

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