

Culturing *Chilomonas*

Background

Chilomonas are free-living, freshwater protozoans. They inhabit water littered with decaying plant matter like stagnant ponds, ditches or marshes. These protozoans are unable to photosynthesize because they lack chloroplasts, or chromatophores, which are pigment containing structures. They commonly feed on organic matter and are often consumed by other protists such as *Amoeba* and *Paramecia*. *Chilomonas* are extremely tiny, usually reaching 20–24 microns in length, which is below the limits of visibility to the naked eye. Two flagella extend from their anterior giving the *Chilomonas* excellent locomotion.

Culturing Media

Upon arrival of the *Chilomona* cultures, loosen the caps immediately and aerate the culture by forcing air into the liquid using a clean pipet. Cultures should be kept cool, between 18–22 °C and stored out of direct sunlight. Inside a cabinet is an ideal location and will prevent algal growth.

Wheat medium or hay infusion are the most commonly used culture media for *Chilomonas*. Pre-made culture media are available from Flinn Scientific. Below are two different recipes for media preparation.

Wheat Medium

Boil 1–2 g of crushed wheat seed in a few mL of spring water for 15 minutes. Boil one liter of spring water for 30 minutes. Allow the solution to cool and then add the boiled, crushed wheat seed. After cooling to room temperature, pour 200 mL of the medium into each culture dish. Finally, inoculate with *Chilomonas*.

Hay Infusion

Boil 10 g of chopped Timothy hay (other types of hay will also work) in one liter of spring water for about 30 minutes. Filter the boiled hay mixture through several layers of cheesecloth. Allow the solution to cool and then add 2 drops of 1 M NaOH and a pinch of black soil.

Pour 200 mL of the medium into each culture dish (stacking culture dishes works best) and let sit for 24 hours uncovered.

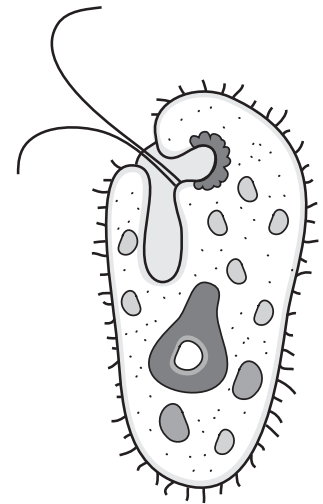
Add two cooked, crushed wheat seeds or 1–2 g of crushed, dried lettuce to each dish. Boil wheat seeds or crushed lettuce in a few mL of water for 15 minutes before adding to the media. The lettuce leaves should be dried slowly in an oven until crisp, and then ground up with a mortar and pestle. Store the dried lettuce in a tightly sealed container for future use.

Tips

- *Chilomonas* are small compared to other protists that may be studied by students. Therefore, it is important to have dense, viable cultures to assure student success.
- A solution of methyl cellulose is helpful in slowing down fast-moving protozoans during microscopic observation.

Disposal

Chilomonas may be disposed of according to Flinn Suggested Biological Waste Disposal Method Type IV. Please consult your current *Flinn Scientific Catalog/Reference Manual* for proper disposal methods.



Materials for “Culturing *Chilomonas*” are available from Flinn Scientific, Inc.

Catalog No.	Description
LM1254	Chilomonas, 30
FB0514	Paramecium Medium, 946 mL
FB0540	Timothy Hay, 100 g
FB0541	Wheat Seed, 100 g
M0155	Quieting/Slowing Solution, 20 mL
AB1264	Culture Dish
FB0570	Cheesecloth, 4 Square Yards

Consult your *Flinn Scientific Catalog/Reference Manual* for current prices.