Transportation of Paramecium

Transport Method

We can either carry it ourselves, or with a Courier. We are very likely to carry it ourselves, but it is possible we do use a courier.

Benefits of a Courier:

* It is safer for the sample (as in climate controlled)
* No luggage risk
* No special permits

Disadvantages of a Courier:

* Cost (50-100 USD) this price depends on when and how fast we want our sample

If we want a courier, we might use FedEx[[1]](#footnote-1)/UPS International[[2]](#footnote-2). FedEx and UPS use the same Triple Packing and Labeling System. More details below.

Carrying it ourselves is better, although we’re not sure, if the paramecium dies during our flight. More details below.

Benefits of carrying it ourselves:

* It is free, so no shipping costs
* No paperwork (compared to shipping it with a courier)

Disadvantages of carrying it ourselves:

* Risk of it dying

Triple Packing and the Labeling System

As mentioned before, with a courier as well as with a flight, you have to seal the tube, or whatever you are transporting in a specific way. It is very simple:

1. Primary Receptacle

Ein Bild, das Laborausstattung enthält.

KI-generierte Inhalte können fehlerhaft sein.This is the very first step, you need have a watertight container.

1. Absorbent Material

Ein Bild, das Text, Screenshot, Design enthält.

KI-generierte Inhalte können fehlerhaft sein.This is placed outside the container. This Material should be enough to absorb all liquid which is inside the container. (note: container shouldnt be full of the liquid, we should leave 20% air)

1. Secondary Receptacle

Ein Bild, das Screenshot, Design enthält.

KI-generierte Inhalte können fehlerhaft sein.This should be also watertight.

1. (Outer Packaging)

This is the box.

Overview:

Outer Box

└── Secondary Container (ziplock bag/hard plastic)

├── Absorbent Material (cotton/paper towel)

└── Primary Tube (your sample)

The labeling isn’t as extreme compared to hazardous samples, so it is very minimal. When shipping via courier we should follow:

* Labeling on the outer box – “*NON-REGULATED BIOLOGICAL SPECIMEN – NON-PATHOGENIC PONG WATER SAMPLE (Paramecium spp.) FOR RESEARCH USE ONLY*”
* Sender/Recipient info but that should be clear
* Additional optional info like: “*FRAGILE*” or “*KEEP AT ROOM TEMPERATURE*”

That is the only information needed, since it is a wild paramecium and its non-infectious.

When travelling with plane it is similar to when shipping with a courier but:

* Labeling on the outer box stays the same “NON-REG…”
* Printed Supporting Document; this is a note explaining what it is, what purpose it has and that is has no commercial value.

Overall it is very important that we do NOT use words like “Biohazard” “Dangerous” because this could raise extra attention.

If we do use air travel, we should pack in checked luggage if >3.4oz

How to prevent the paramecium from dying?

As mentioned before, the paramecium is very likely to die during our flight, but if we prepare well it will survive.

It needs an **oxygen supply**, so having a small air gap in the sealed tube should be enough for a flight. If shipping, we avoid filling the whole tube, we leave 20% air.

It also needs to stay in the **same temperature** if possible, changing temperature aren’t very good for the paramecium. Airplane cargos hold 5-15 grad Celsius, this doesn’t affect the paramecium. If we leave it in hot temperatures for too long, it could die, for example avoid leaving it in the car.

We **don’t** have to worry about the **food supply or vibration**, because 1. They can live up to <3 Days without food, and 2. They live in turbulent water, so they are used to it.

Backup

If our flight doesn’t get delayed, we should have a high survival rate (~95% survival rate) if packed well. If our flight does get delayed, we might miss some of the event and our paramecium has a higher chance of dying (~70% survival rate).

Worst case scenario, we package it wrongly or make a mistake, and the whole sample dies. That means the tube leaks or overheats.

As a backup, we could buy a replacement in the U.S or use dried cyst.

As packaging consists of different layers, here are the products we are going to use:

Primary Container: 15mL Falcon Tubes[[3]](#footnote-3) 9 Euro

Absorbent Materials: Bio-Cotton-Balls [[4]](#footnote-4)7 Euro

Secondary Containers: Ziplock Freezer Bags (Somebody probably has this at home)

Outer Packaging: Cardboard Box (somebody probably has this at home aswell)

For Labeling: Sticker (Somebody has this at home)

Notes for the future: The supporting letter explaining the samples purpose still needed/needs to be verified and double checked.

Possible supporting note (in german and English):

(Personal Info)

To Whom It May Concern:

This letter serves to declare that the enclosed/attached sample contains:

Contents: Non-pathogenic pond water with wild *Paramecium* spp. (unicellular organisms)

Volume: x (we don’t know yet) mL in a sealed, leak-proof tube

Purpose: Educational use at Hackclub Apex Hackathon (non-commercial research)

Safety: Contains no human/animal pathogens, toxins, or genetic modifications

This sample complies with:

- IATA Dangerous Goods Regulations 3.6.2 (exempt from hazardous materials classification)

- USDA/APHIS non-regulated status for non-modified microorganisms

For questions, contact:

Personal Information

Sincerely,

More Personal Info

For more vouches, we could call officials at the Hackathon.

1. https://www.fedex.com/en-us/shipping/how-to-ship-clinical-samples.html [↑](#footnote-ref-1)
2. https://www.ups.com/at/en/support/shipping-support/shipping-special-care-regulated-items/hazardous-materials-guide/biological-substances#:~:text=What%20are%20the%20regulatory%20requirements%20that%20must,they%20are%20marked%20with%20the%20words%20' [↑](#footnote-ref-2)
3. https://www.amazon.de/HUAZIZ-Kunststoffr%C3%B6hrchen-Probenbeh%C3%A4lter-Mikrozentrifugenr%C3%B6hrchen-Schraubverschluss/dp/B09KH7B4MM/ref=sr\_1\_2?\_\_mk\_de\_DE=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crid=38K19JPWSFFU&dib=eyJ2IjoiMSJ9.0Vo0qpeke2yuaiS3xo6T4OTTkfC-lYK6RK77oj8eo3xZf5brnEdBg2YdLa9nIrLBa8OuGHQP9UCSRfJE1vg3lHe99JLbiz2CYpc4i6MszZB7vp5C2\_URR0YvuNdLrGF1vCCLVd9fi2RfLLv4AYZY9eS6TT0pkaA-tRC9QYb1EQVhV7YgLuNupklnlB3oMJ\_-HouOllxSM6hY-IG\_8XdhI8XLLqnbwZEnVpEqNzCk23SXsPa9YJuIycKfGGInei5DpGJrCqKqoWwkuVgIN5U1jP1TtMe99lsrQ5QNM8-bf\_M.kR2vi1vyr120X6Vx4vHB2rMbjNtCWQtNT6VdNY5jbr0&dib\_tag=se&keywords=15ml%2Bfalcon%2Btube&qid=1745773213&sprefix=15ml%2Bfalcon%2Btube%2Caps%2C115&sr=8-2&th=1 [↑](#footnote-ref-3)
4. https://www.amazon.de/Organyc-100-Bio-Baumwollb%C3%A4llchen-empfindliche-St%C3%BCck/dp/B0154FUX0M/ref=sr\_1\_1\_sspa?\_\_mk\_de\_DE=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crid=24EVKYVBRRZP3&dib=eyJ2IjoiMSJ9.FKw-C0hxLk5M67l2qclBLWL8JX6k45UNZfqWYkfXcElDSI9qP1L1ATDmk3DGFkAI10k6oMcRcQ2nCsDT4Aq3M1ZfEGeJBsCqQrEmZKf60BfngUI14r1ZLoI77XCn9x6OZXBqcEPkOEEXIHDyx7DWPJuK5czEL24rAxvBPnCq\_WC9LdN9eYabXtiL-Z6pdlbBVm2MWHzvO\_NuqnIkD36JtMgqv6etng\_AnGU46RUvVYtdws3RrlERokvi-bVaFvqKKXnrMNGsx\_QxhiwwslwoMX7NVQoIlF4vzcPK6JBjx5g.mKiXyq8o-xFReZTP7y\_ljCbNTjDZEZOUjKGJeFMgcng&dib\_tag=se&keywords=cotton+balls&qid=1745773337&sprefix=cotton+balls%2Caps%2C126&sr=8-1-spons&sp\_csd=d2lkZ2V0TmFtZT1zcF9hdGY&psc=1 [↑](#footnote-ref-4)