

Plant Tissue Shipping Instructions

The following technical note is offered to give guidance as to the preferred method for packaging and shipping **fresh** and **frozen plant tissue** to preserve DNA quality when transporting. Young fresh plant tissue is preferred, though freezing is an option if DNA isolation cannot proceed in a timely manner.

Shipping Instructions for **Fresh** Plant Tissue

When fresh, young plant material is available, please use the following guidelines to prepare and ship your plant material.

Plant Selection

- Choose young (new growth) plant tissue, such as leaves, that are fresh.
- Clean the leaves of dirt and debris before packaging.

Use	Do Not Use
Young	Mature
Crisp and intact	Wilted, bruised or insect/fungus/virus damaged
Tender	Tough
Newly harvested	Old (not fresh)
Clean	Dirty



Packaging Instructions for Fresh Plant Tissue

- Place leaves on a stack of moist paper towels.
- Spread them out in a single layer.
- Cover with moist paper towels.
- Do not stack leaves.

Use	Do Not Use
Moist towels	Dry or dripping wet towels
Single layer of leaves	Piled or stacked leaves.



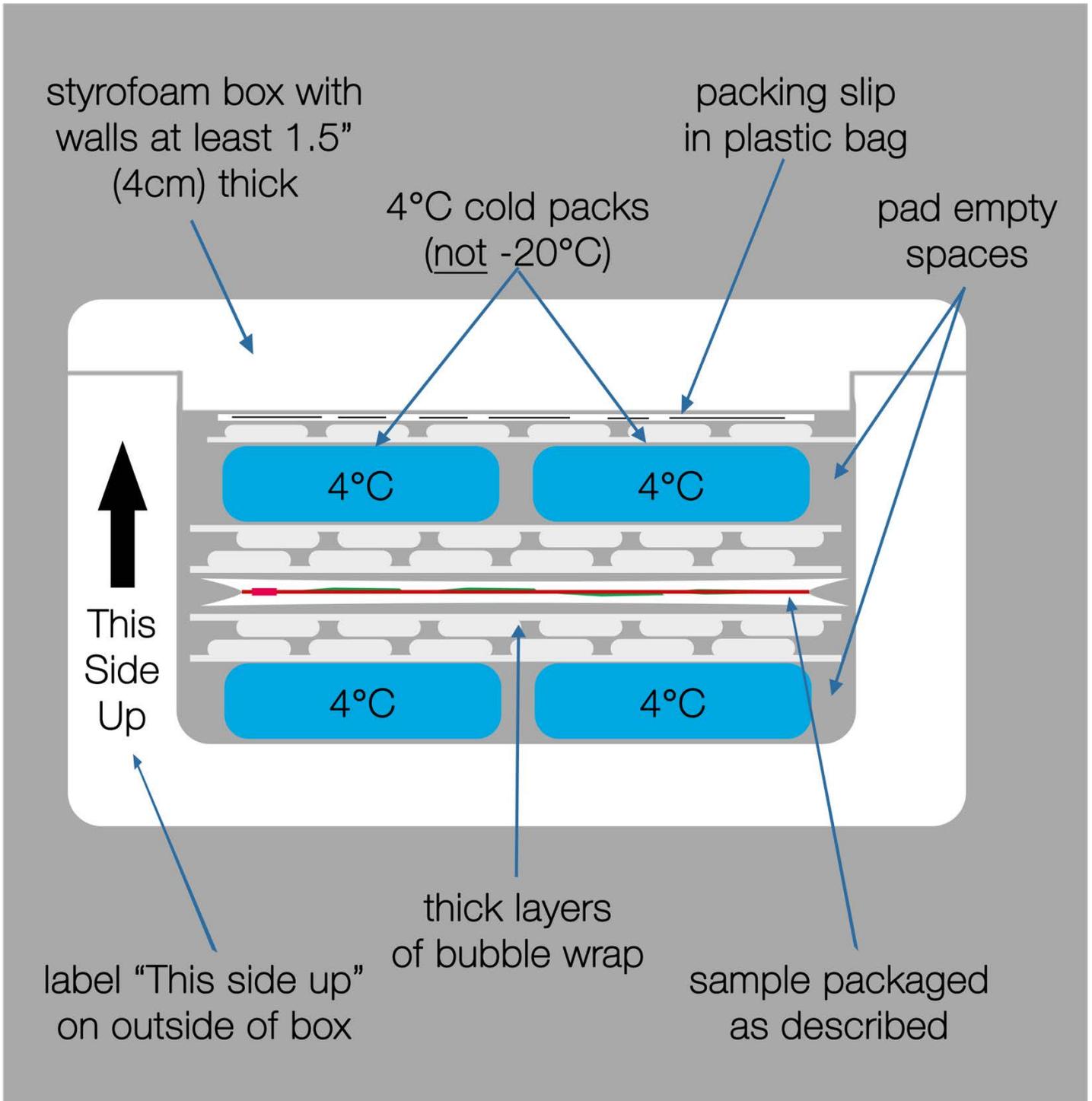
Shipping Instructions for Fresh Plant Tissue

Choose the fastest shipping speed possible (overnight or next-day). For longer shipment times (such as for international shipments), ensure that the package has enough cold packs to stay at 4°C for the entire transit time.

Note: The figures on page 4 show only 4 cold packs, but more may be needed during summer months or for shipment times longer than 1 day. It may be necessary to place the plant tissue into a secondary container (box or order rigid vessel) in order to prevent them from being crushed by the weight of the additional cold packs.

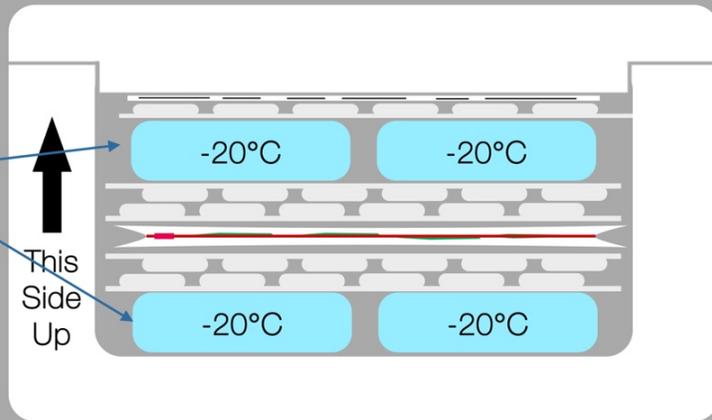
Shipments should only be delivered from Monday to Thursday; avoid shipments arriving on Friday to Sunday, or national holidays.

Pack the **Fresh** plant material as follows:

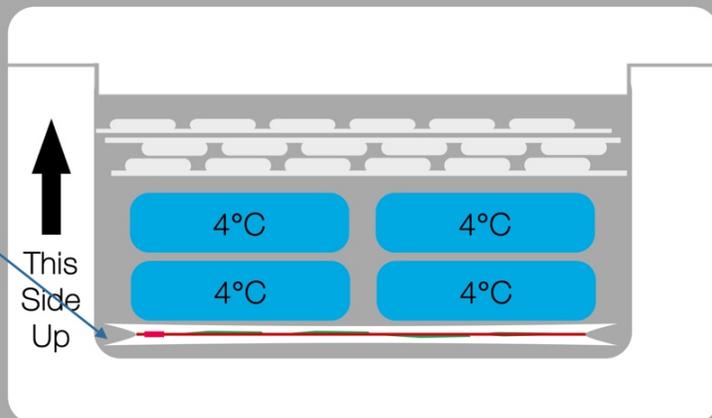


Avoid the following:

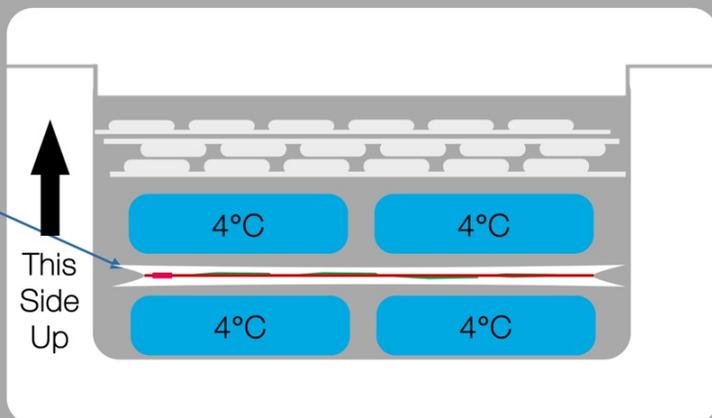
cold packs colder than 4°C
(results in freeze-thawed sample)



sample on bottom of container
(causes crushing and bruising)



cold packs directly touching sample
(causes bruising and freezer burn)



Shipping Instructions for Frozen Plant Tissue

When fresh, young plant material is not available, please use the following guidelines to prepare, freeze and ship your plant material.

Plant Selection and Preparation

- Choose young (new growth) plant tissue, such as leaves, that are fresh if possible.
- Remove wilted, bruised, or damaged portions of the leaves/tissue.
- Remove tough stems and petioles.
- Clean the leaves of dirt and debris before packaging.
- Place 3 gram aliquots of tissue into 50 mL conicals.
- Flash freeze tissue (in liquid nitrogen) then store at -80°C until ready to ship.

Packaging and Shipping for Frozen Plant Tissue

Packaging materials must be leak-proof and meet the general requirements of the US Postal Service and other carriers, and customs authorities where applicable. Appropriate packaging requires:

- All tubes should be sealed with Parafilm to prevent leakage.
- Sample placed inside a sealed plastic bag (or other sealed container).
- Cushioning wrap - bubble wrap sheets are best - wrap around the bag loosely. Please DO NOT tape or staple to the plastic bag. DO NOT use household insulation.
- Place in a polystyrene box that is large enough to hold the sample and an appropriate amount of dry ice to last during transit.
- Place polystyrene box in a cardboard shipping box with enough cushioning to prevent movement of the contents (if not a snug fit).
- Apply dry ice label to exterior of box (UN1845).

Ship the package through a shipping company that will replenish dry ice in transit (such as World Courier), or choose a shipping speed that will ensure that the package will arrive before the dry ice runs out. If shipping internationally, ensure that samples are admissible and that proper declarations are made with customs authorities. Accommodate for customs inspection accordingly.

Shipments should only be delivered from Monday to Friday; avoid shipments arriving on Saturdays, Sundays, or national holidays.

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