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# Shipping Embryos in a Portable Incubator

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## ABSTRACT

This is a protocol to describe how to ship non-frozen embryos

## ATTACHMENTS

[Shipping Embryos in a Portable Incubator.pdf](#)

## DOI

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## PROTOCOL CITATION

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- 1 Test the shipping incubator and make sure that it can remain powered for at least 24 hours while operating with the battery. We currently use TO 42 from WTA <https://www.wtavet.com.br/?lang=en> but others work well also. The temperature is set to 38.5°C 
- 2 Start charging shipping incubator 1 day before shipping so that it is fully charged at the time tubes containing embryos are added to the incubator.
- 3 Make shipping label. We routinely use Fedex service with Priority Overnight Service. Fedex states that these packages

arrive by 10:30 AM but it is more like noon for locations not close to a Fedex facility. First Overnight Service is supposed to arrive by 8:00 am but arrival before 10:30 AM is more like it when the location is remote. Note First Overnight is expensive! We deliver the package to Fedex for shipping by 4:30 PM

- 4 Two methods have been used successfully.
  - Use 1 ml Corning cryogenic vials with orange caps filled with HEPES-TALP supplemented with 10% (v/v) fetal bovine serum (R&D Systems) and 50  $\mu$ M dithithreitol. We have successfully shipped up to 15 embryos using this method.
  - Add up to ~50 embryos per tube in polypropylene-stoppered 10  $\times$  63 mm polystyrene tubes containing 1 ml SOF-BE2 supplemented with 1 mM HEPES, pH 7.5, and 50  $\mu$ M dithiothreitol. Tubes are equilibrated overnight in a humidified incubator at 38.5°C and 5% O<sub>2</sub>, 5% CO<sub>2</sub>, and 90% N<sub>2</sub>. After addition of embryos to the medium, ~1.5 ml mineral oil was layered over the medium and tubes were placed in the incubator.
- 5 We have had plastic shipping containers custom-made for us by Benson Box (<https://bensonbox.com>) to protect the incubator during shipment. These are lined with Styrofoam to cushion the incubator and have lots of labeling to recommend caution with handling. The one currently used for the WTA incubator was designed for a large incubator and so additional padding is added to the inside of the container. Images are shown on the next page. Benson Boxes are very durable.  [Picture1.png](#)