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MANUSCRIPT CITATION:
TBD

Protocol status: Working
We use this protocol and it's working

Environmental DNA (eDNA) Sample Shipping Protocol

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ABSTRACT

This is a protocol for mailing PCR amplicons generated from eDNA samples, specifically via the following earlier sampling & filtration, extraction, and PCR protocols, e.g.:

Protocol

NAME
Coastal Environmental DNA Sampling & Gravity Filtration Protocol

CREATED BY
Meghan M. Shea

PREVIEW

Protocol

NAME
DNA Extraction Protocol from Sterivex Filters

CREATED BY
Meghan M. Shea

PREVIEW

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Keywords: PCR amplicons, eDNA, shipping, environmental DNA

Protocol

NAME

Environmental DNA (eDNA) COI PCR Amplification and Gel Electrophoresis Protocol

CREATED BY

Meghan M. Shea

PREVIEW

While this protocol was designed for mailing to the Georgia Genomics and Bioinformatics Core, the general principles may be relevant to other shipping contexts.

Acknowledgements & Attributions:

Thanks to Bradley B. Tolar for guidance on successful shipping protocols.

IMAGE ATTRIBUTION

Meghan M. Shea

MATERIALS

General Laboratory Equipment:

	Equipment	Specific Model Used
	10% bleach solution in spray bottle	NA
	>70% ethanol solution in spray bottle	NA
	RNase Away solution in spray bottle	NA
	20 µL multichannel pipette with sterile tips	Various
	UV Crosslinker	UVP CL-1000 Ultraviolet Crosslinker
	PCR Tube Holders	Various
	Ice bin	Various
	Parafilm	Various
	Kimwipes	Various

Shipping Supplies:

	Material	Amount Needed	Source	Link	Approx. Cost
	96-well plate	1/96 samples	Applied Biosystems via ThermoFisher Scientific (4346906)	https://www.thermofisher.com/order/catalog/product/4346906	$129/20 plates
	Aluminum adhesive seal for 96-well plate	1/plate	Unknown	NA	Unknown
	Cardboard	Enough to cover both sides of each plate	Various	NA	Unknown
	Ziploc bags	Various	Various	NA	Unknown
	Bubble wrap	Various	Various	NA	Unknown
	Hard container for holding plates	Various	Various	NA	Unknown
	Styrofoam cooler with associated outer cardboard box	1	Reagents previously shipped on ice	NA	Recycled

Preparing Samples for Shipping

1 Clean bench area with 10% bleach, 70% ethanol, and RNase Away

Note

Ideally, this should be a designated post-PCR bench area.

2 Wipe down 20 µL multichannel pipette and several PCR tube holders with RNase away. Run in UV Crosslinker for 10 minutes on each side.

3 Wipe down ice bin with 10% bleach, 70% ethanol, and RNase Away, fill with ice, and add PCR products stored in 8-strip PCR tubes

4 Label all 96-well plates needed for storing samples accordingly

5 Being careful not to open PCR tubes directly over the 96-well plates, add 15 µL of sample to each well using multichannel pipette, making sure you keep track of the orientation of how the plate was filled

6 Seal the plates carefully with aluminum adhesive seals

6.1 Press around the edges of each well to make sure they are sealed

7 Parafilm around the edges of each plate

8 Wrap each plate in Kimwipes to absorb any condensation that occurs during shipping

9 Cut two pieces of cardboard that fit on either side of each plate; tape the cardboard around each plate to form a sandwich (to keep it from getting punctured while shipping)

10 Seal each plate in a new Ziploc bag and label accordingly

11 Bubble wrap around each plate and place in a hard container (cardboard freezer box, pipette tip box, etc.)

12 Seal hard container with tape and place in its own Ziploc bag; label accordingly

13 Place bagged box in a Styrofoam cooler that fits in an associated cardboard box and fill with ice packs

14 Tape Styrofoam cooler closed and secure it in the corresponding cardboard box

Note

If you need to include any order information or documents alongside the samples, don't forget to put them in the box here.

15 Store cardboard box at -20°C until ready to mail