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Instructions on two transportation methods for FFPE Sections

CONTENTS

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*Video guidance resource links:

1. FFPE Section (Sample Selection) Preparation and Shipping Guidelines (For Section Preparation)
   *Please access here.

2. FFPE Section H&E Staining and Selection Guidelines (For the Recipient)
   *Please access here.

Two container options for FFPE section transportation

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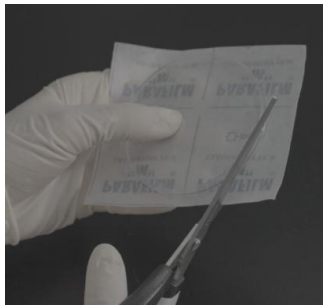
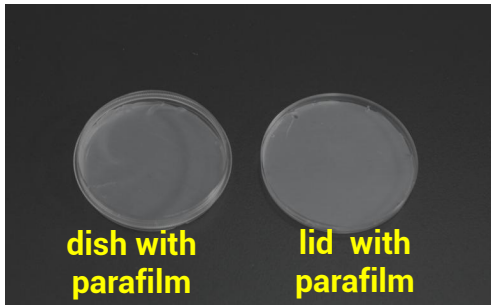
Method 1:
Use 50 mL centrifuge tube

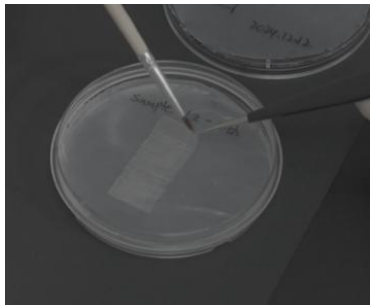
- Normal 50 mL centrifuge tube
- Place the FFPE section into the tube directly

Method 2:
Use petri dish with parafilm

- Select the petri dish of the required size, cut two circles from the parafilm, and place the circular parafilm into the dish and the lid respectively
- Place the FFPE section(s) into the prepared container







Pros and cons of the two methods

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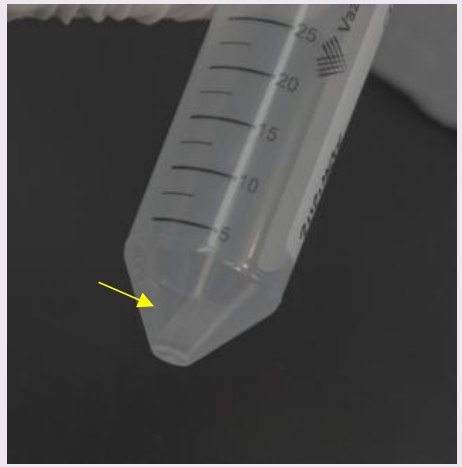
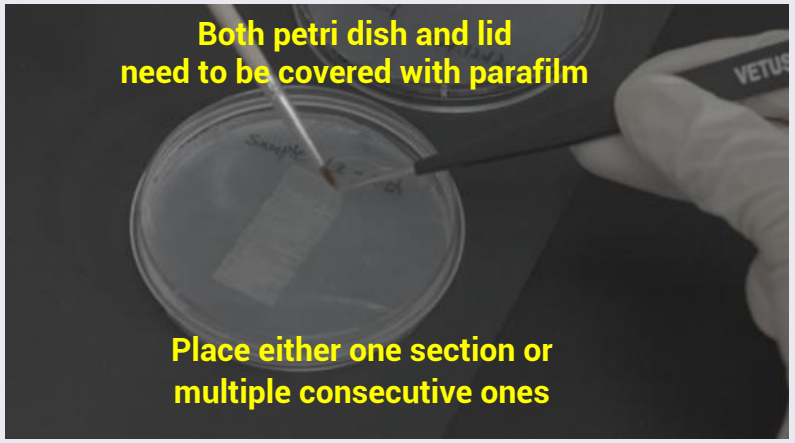
Container	50 mL centrifuge tube	Petri dish with parafilm
Example		
Pros	• Can be used directly • Suitable for FFPE sections of regular size and smaller size	• Serves as an open container with a wide opening and shallow depth for easier access • The FFPE section can be kept flat during transportation • Available in different sizes of petri dishes • 1 section/container or several consecutive sections/container
Cons	• There is limited space within the tube, so large sections may be folded or even stick to themselves during transportation. • Only 1 section/container	• Need to prepare and place the circular cut parafilm

Protocol: Before transportation

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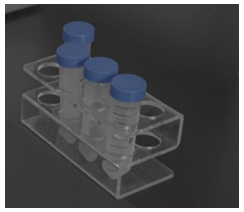
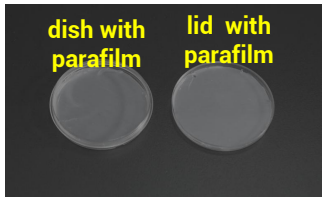
Step 1

a. Prepare containers in advance as required.

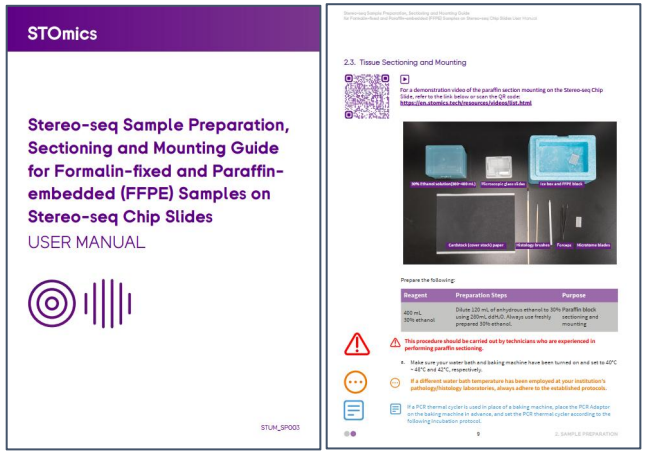
50 mL centrifuge tube



Petri dish with parafilm

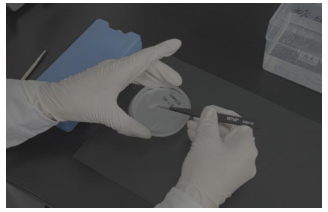


b. Prepare FFPE section(s) according to the SOP

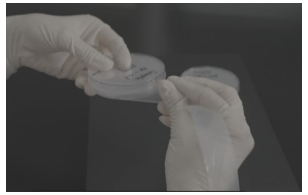


Step 2

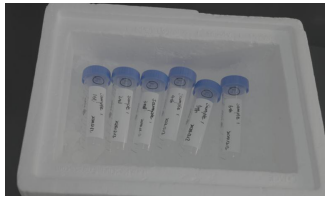
a. Transfer the FFPE section to the container, label sample information.



b. Seal the containers using the parafilm.

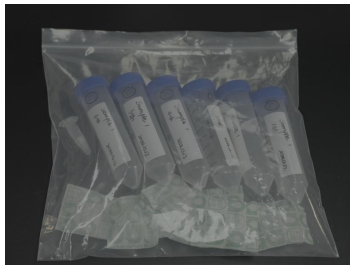


c. Place the container with section into ice box. Then transfer other sections into containers.



Step 3

a. Place the containers with sections in a sealable bag with a sufficient number of desiccants.



b. Place the bag into a foam box with a wall thickness of at least 3 cm, ensuring a tight seal. Place no fewer than 6 ice packs.

Important tips: Before transportation

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1. Before operating the FFPE section transportation experiment, you need to read the STUM-SP003 User Manual first (click to access).
2. If the room temperature is too high, adjust the air conditioner to keep the room temperature below 20°C;
3. When transferring the sections, hold the edge of the section (without touching the tissue) with a pair of forceps or a histology brush to avoid damaging the tissue.
4. Sections that are incomplete, falling apart, or have obvious folds and wrinkles are not acceptable for shipping.
5. If part of the consecutive section shows unevenness, you can try to flatten out one section with a histology brush before transportation. Alternatively, if the section can be flattened smoothly in a water bath, subsequent sections can be shipped.
6. If you choose petri dish as the section container, parafilm must be placed on both the petri dish and the lid. Otherwise, FFPE sections will stick to the surface of the petri dish.
7. Label the sample information and date on both the container and the lid.
8. When long-distance transportation is required, or when experiencing high temperatures and extreme environments, increase the number of ice packs to maintain sample temperatures between 2°C ~ 8°C.

Protocol: After transportation

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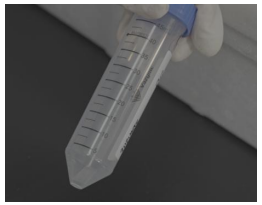
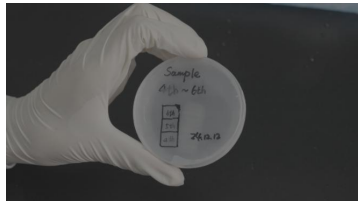
Step 1

a. Once the sections are received, check the FFPE sections without opening the container.



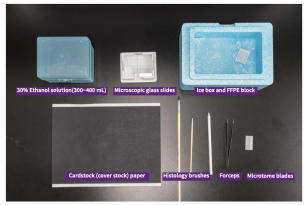


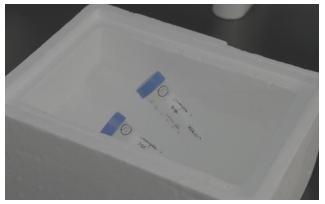
b. After 1 week of transportation, FFPE sections can be stored at 2~8 ℃ for up to 4 weeks.

Step 2

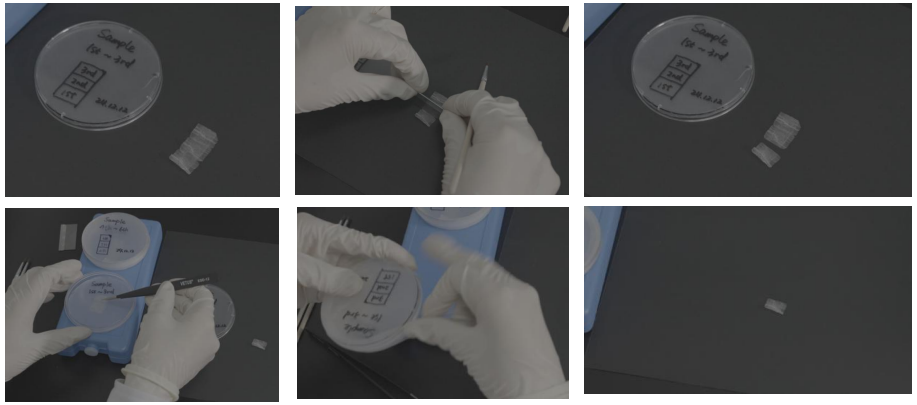
Select the FFPE section for the subsequent transcriptomics experiment.

- If FFPE sections are preserved as 1 section/container, simply take out the selected container (section) and keep the other containers stored at 2~8 ℃.



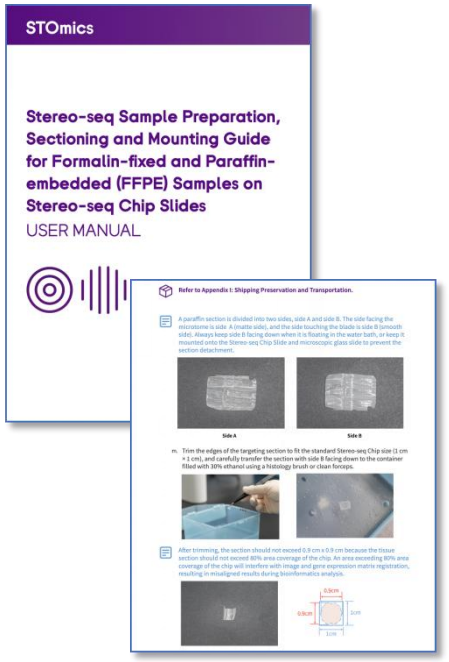


- If consecutive FFPE sections are stored in a petri dish with parafilm, remove the consecutive sections and cut the one needed for the subsequent experiment, then return the other consecutive sections to the dish. Seal the dish with parafilm and store it at 2~8 °C.



Step 3

Perform the transcriptomics experiment according to the user manual.
Please click to access:
1. STUM-SP003
2. STUM-TT004



Important tips: After transportation

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1. **If a subsequent experiment is not performed on the day of receipt, the sections should be immediately stored at 2-8 °C.**
2. **Before the transcriptomics experiment, if the FFPE section shows static electricity from friction during transportation, the container can be placed at -20°C for 5 minutes to facilitate easy removal of the section.**
3. **If the section is still difficult to remove with forceps, you can use a small brush and utilize the static electricity between the brush and the section to remove it.**

Demonstration of the physical state of the samples

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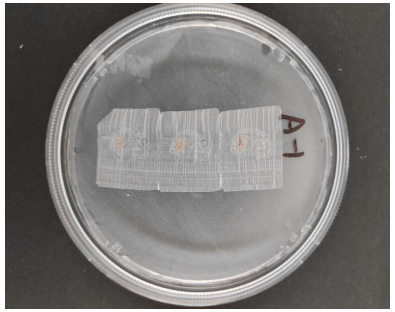
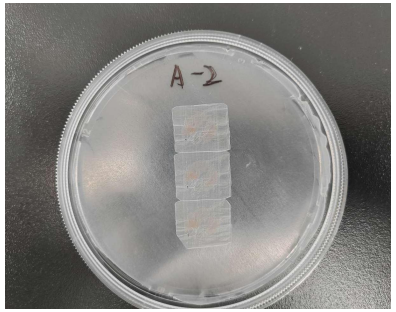
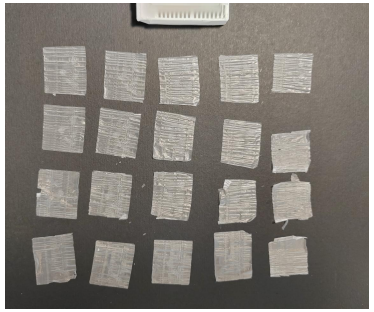
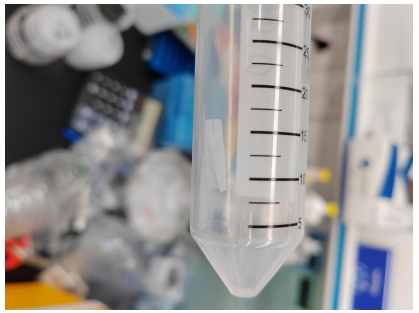
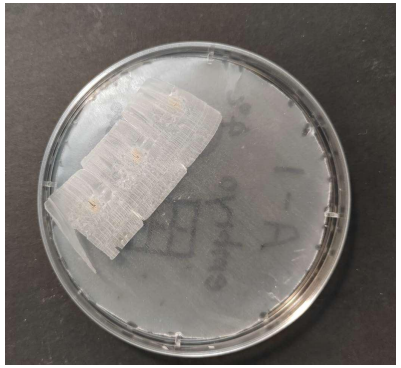
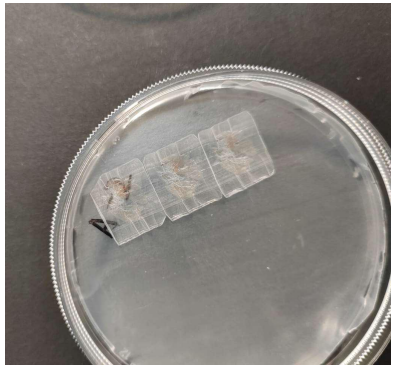
1 week transportation + 4 week preservation

Sections were preserved in good physical condition after both transportation methods, with no incomplete, falling-apart, or obviously folded and wrinkled sections observed.

	Large size sections 3 consecutive sections	Standard size sections 3 consecutive sections	Standard size sections Separate sections	Standard size sections 1 section/tube
Before transportation				
After transportation				

H&E staining results

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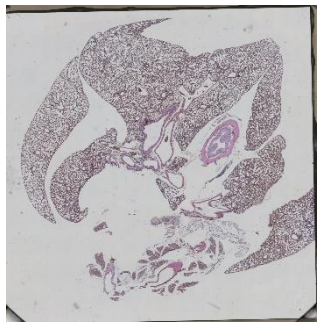
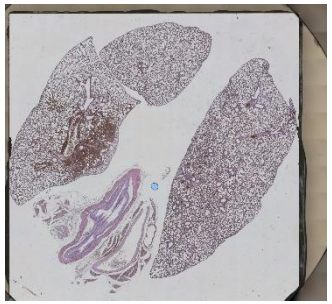
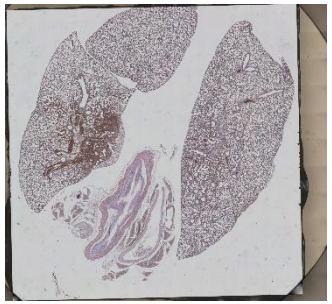
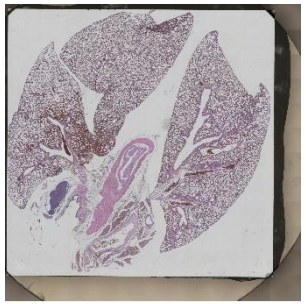
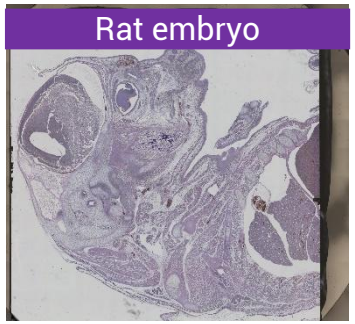
1 week transportation + 4 week preservation

Compared to the control sections, the tissue structure was distinct, and the nuclei and cytoplasm were also distinctly stained.

	Control Freshly sliced	50 mL centrifuge tube	6 cm petri dish with parafilm	7 cm petri dish with parafilm （3 consecutive sections）
	Chip No. 1	Chip No. 2	Chip No. 3	Chip No. 4
Standard size block (Mouse lung)				 C04876G5
Large size block (3.2 cm × 2.4 cm) (Human CRC)				Rat embryo 

Gene expression results

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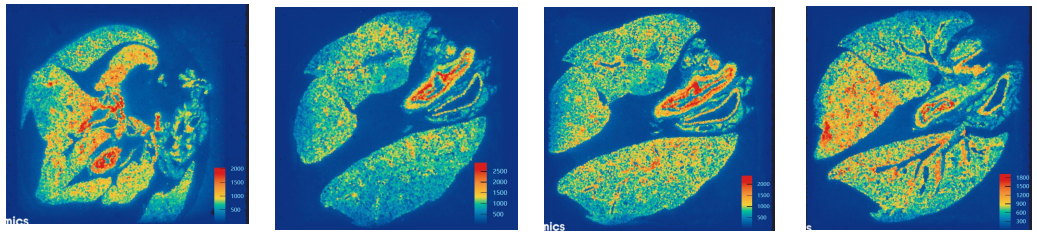
1 week transportation + 4 week preservation

The number of genes in the shipped FFPE sections showed equivalence to that of freshly sectioned ones.



Chip No.	1	2	3	4	5	6	7
	Mouse lung				Human CRC		
Conditions	Control (freshly sectioned)	50 mL centrifuge tube（1 section/tube）	6 cm petri dish with parafilm（1 section/dish）	7 cm petri dish with parafilm（3 consecutive section/dish）	Control (freshly sectioned)	50 mL centrifuge tube（1 section/tube）	6 cm petri dish with parafilm（1 section/dish）
Total reads/M	424.76	410.14	425.30	427.32	409.58	427.85	460.16
Bin200 Median MID counts/K	10.92	12.80	12.50	10.36	6.97	14.75	12.39
Bin200 Median Gene/K	3.30	4.0	3.86	3.50	3.50	5.54	5.0
Bin20 Median Gene	64	84	78	69	55	119	97
Dup/%	31.51	23.8	25.5	31.2	29.6	31.0	41.1

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THANKS