



Lungfish

Air Sample Elution Kit User Manual

Supplemental Lungfish™ Program Instructions



About Lungfish™

The Lungfish™ program is an open-source research collaborative with the goal of supporting organizations and communities to understand pathogen presence using wastewater and air sampling. This research seeks to transform complex biological materials into insightful scientific data that enables our partners to act more proactively and intelligently.

Air sampling research is an impactful tool that looks for pathogens and other biological signals directly in the air in our natural environments. By monitoring environments rather than individuals, we can take the 'pathogen pulse' of congregate settings in a single sample, without having to rely on costly and invasive individual testing.

We monitor change to generate insights that inform action.

IMPORTANT: BEFORE ELUTING AIR SAMPLES CAREFULLY INSPECT THE CONTENTS OF THE KIT TO CONFIRM THERE ARE NO MISSING OR DAMAGED PARTS OR MATERIALS. IF THE DEVICE, PARTS OR MATERIALS ARE WORN OR DAMAGED DO NOT USE. CONTACT LUNGFISH FOR REPLACEMENT MATERIALS.

Kit Overview

The Elution Kit contains the supplies needed to elute your air sample after collection, in preparation for testing.

DEVICE (NOT PROVIDED)



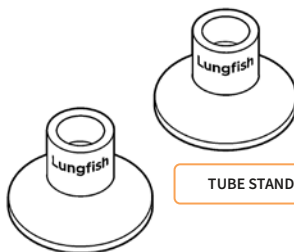
PHONE WITH THE
LUNGFISH APP INSTALLED



5ML ELUTION TUBES

x200

PRE-FILLED WITH 1ML OF PBST
SOLUTION [PHOSPHATE BUFFERED
SALINE + TWEEN]



TUBE STAND

x2

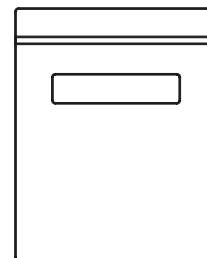
DISPOSABLE FORCEPS

x200



SPARE BAGS

X50





Download our app

01



DOWNLOAD THE LUNGFISH APP

Scan the QR code above or navigate to **<https://pwa.lung.fish>**. On Android, tap “Install App”. On iOS, select the share menu, tap view more, then select the “Add to Home Screen” option. The app is now installed and can be found in your app drawer or home screen.

02



SIGN INTO THE APP

You can sign in directly via your organization account (e.g., work or school email). If your site does not have this type of account, you can sign in using a separate email and password.

03



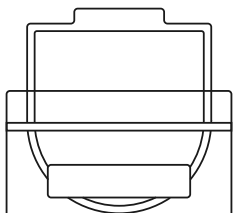
INTERNET CONNECTION

Make sure your device has an internet connection (Wi-Fi or mobile data). Allow the app to access your camera and location.



Eluting your collected sample

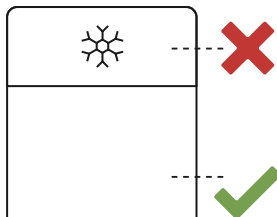
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PREPARING COLLECTED SAMPLES

Follow the instructions in your air sampling kit for information on how to collect your air sample. Once the collection is finished and logged into the Lungfish app, your collected sample should be in a clean plastic bag.

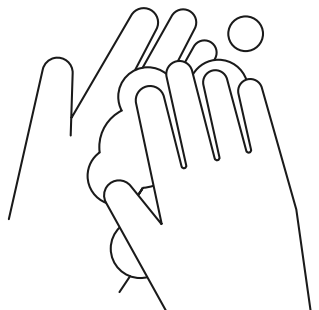
02



STORING COLLECTED SAMPLES

If you won't be doing the elution process right away, store the bagged sample at room temperature (15–25°C / 59–77°F) if eluting within 48 hours, and in the refrigerator (2–8°C / 36–46°F) for longer term storage. Do not freeze.

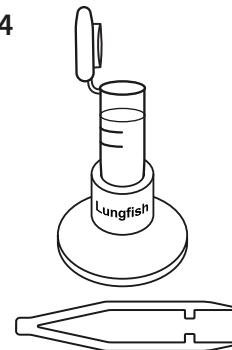
03



WASH HANDS & WEAR GLOVES

It is recommended to wash your hands and put on gloves before starting the elution process.

04



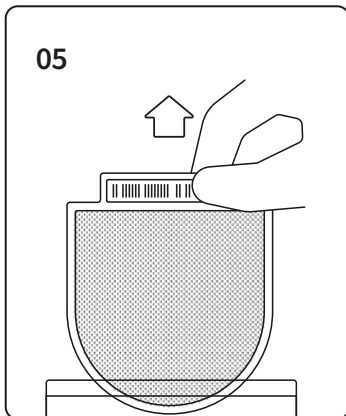
PREPARE CONSUMABLES

Once ready to elute your sample, grab one pre-filled elution tube, place it into the stand, and open its cap. Grab a pair of disposable forceps and take them out of the packaging.



Eluting your collected sample

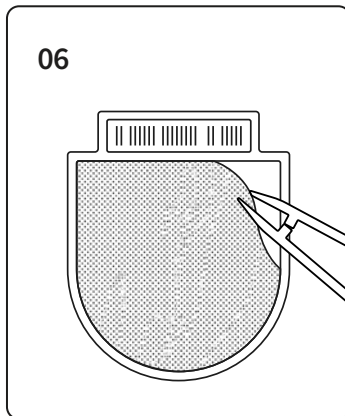
05



RETRIEVE SAMPLE

Take your collected sample out of the plastic bag, holding it only by its cassette frame. Do not let the inner filter be touched or contaminated.

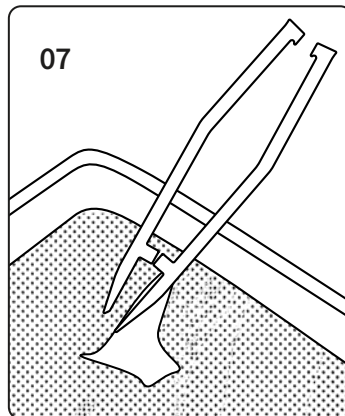
06



DETACH FILTER

Use your forceps to gently detach the filter from the cassette, then grab it by its plastic edge, trying not to touch the inner filter material. Do not throw away the cassette, as you will need to scan its barcode into the Lungfish app.

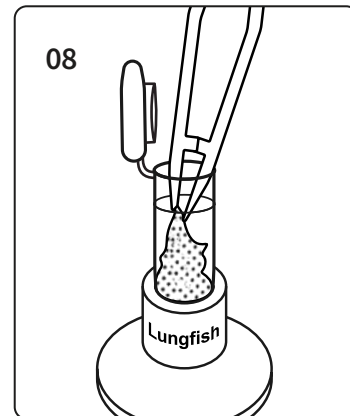
07



RIP INNER FILTER MATERIAL

To remove the inner filter out of the plastic cassette, use the forceps to poke a hole in the material, then rip it off by pulling it away from its plastic edge.

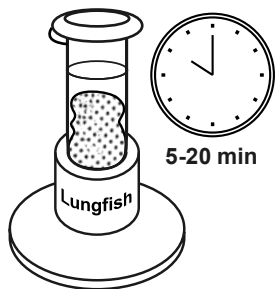
08



INSERT MATERIAL IN TUBE

Use the forceps to insert the filter into the pre-filled elution tube. Squish it down to the bottom to ensure the filter is submerged in the liquid, then close the tube cap tightly.

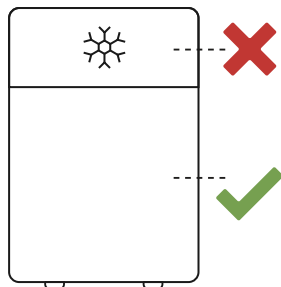
09



ELUTE SAMPLE

Allow the sample to sit in the liquid for 5-20 minutes before testing.

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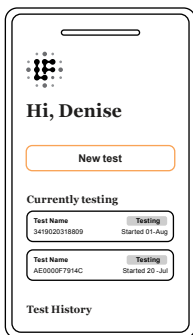
STORING ELUTED SAMPLES

If you won't be performing the test right away, you can store it in the refrigerator (2–8°C / 36–46°F). Do not freeze.



Testing your eluted sample

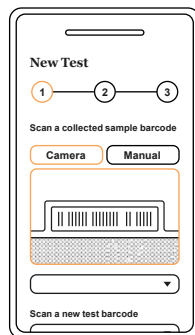
01



LOG TEST INTO THE APP

Open the Lungfish app, select the “Tests” tab at the bottom, then tap “New Test”.

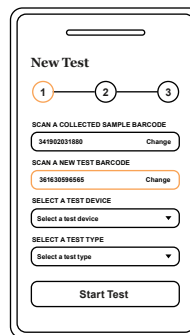
02



SCAN SAMPLE BARCODE

Using your camera, scan the barcode on the collected sample (i.e. the barcode on the top of the plastic cassette that belonged to the eluted sample).

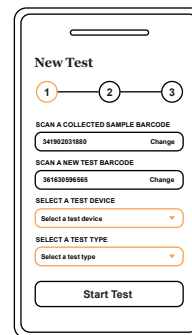
03



SCAN TEST BARCODE

Using your camera, scan the barcode on the test cartridge you will be using for the test.

04



TEST DEVICE & TYPE

Select the test device and the test type from the drop down menus.

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START TEST

Tap “Start Test”, then proceed with testing the sample per your testing device’s manufacturer instructions. You may now discard the plastic cassette. Once the test is complete, return to the app to submit the results and finish the test.

FINISH TEST

Open the app, then select the “Tests” tab at the bottom. From the “Currently testing” list, choose the test you want to mark as finished by tapping on it.

SUBMIT RESULTS

Enter the results, then tap “Submit results” to mark the test as finished.

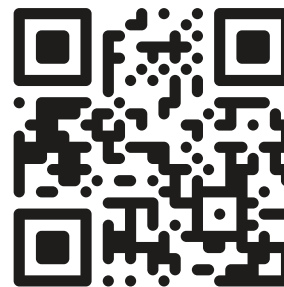


Contact

For any questions or issues with your kit, contact
info@lung.fish

This manual and additional information are
available at **<https://lung.fish>**

Scan the QR code on the right to learn more.





Liability Disclaimer for Environmental Air Sampling Program

This environmental air sampling research program (the “Program”) is intended solely for the collection and analysis of airborne particulates for the limited purpose of identifying the potential presence of pathogens in ambient air for scientific research purposes. The Program is not designed, intended, or certified to diagnose disease, assess individual health risk, or serve as a substitute for professional medical, industrial hygiene, infection prevention, or environmental health advice. Any data generated from the study and provided to users is for informational purposes only. By participating in this Program, the user acknowledges and agrees to the following:

1. No Medical or Health Determination

Results obtained from participating in the Program are informational only and do not constitute medical advice, diagnosis, treatment recommendations, professional advice, infection prevention services or public health surveillance services. The presence or absence of detected pathogens does not confirm actual exposure risk, infection, or safety of any environment. Participants acknowledge that this research does not qualify as human subject research, and all biological materials collected are aggregated and deidentified. Any data collected as part of participating in the Program will be disclosed in accordance with any written agreement, participating organization consent or Lungfish’s privacy policies.

2. Limitations of Detection

Participation in the Program may not detect all pathogens present in the air and may produce false positives or false negatives. Environmental conditions, sampling methods, user operation, and other external factors can affect accuracy and reliability.

3. User Responsibility

The user assumes full responsibility for the interpretation and use of any data generated by and through the Program. Decisions made based on such data, including but not limited to health, safety, occupancy, or operational decisions, are made at the participant’s and user’s own risk. Failure to follow handling instructions may expose a sample handler to pathogens collected on the filter which may cause them illness, disease or death.

4. Not a Safety Guarantee

Participation in the Program does not guarantee that an environment is safe, free from pathogens, or compliant with any regulatory or safety standards.

5. No Liability

To the fullest extent permitted by law, Lungfish, all manufacturers, distributors, and affiliates disclaim any and all liability for any direct, indirect, incidental, consequential, or special damages arising out of or related to the use of, misuse of, or inability to use the Program kit materials, devices, applications or its results.

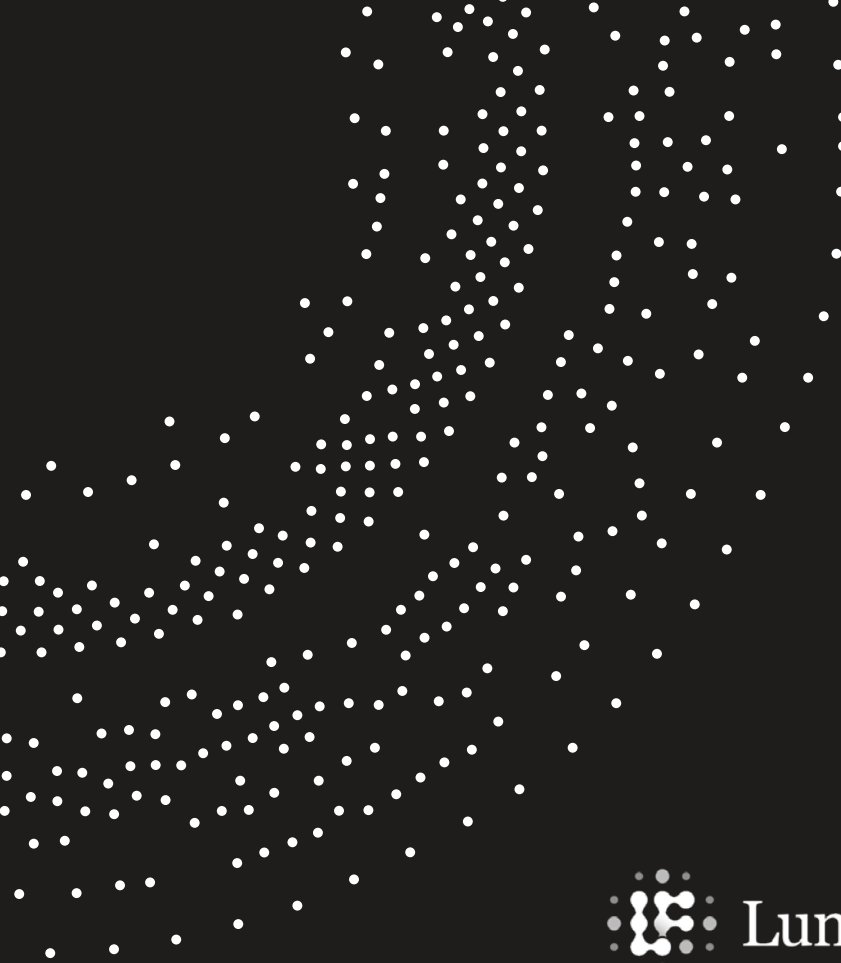
6. Regulatory Compliance

The Program and related materials or devices are not approved or cleared by regulatory authorities (e.g., FDA/CE) for specific uses. It is the user’s responsibility to ensure compliance with all applicable laws, regulations, and guidelines.

7. No Warranty

The Program kit, devices and materials are provided “as is” without warranties of any kind, express or implied, including but not limited to warranties of accuracy, reliability, merchantability, or fitness for a particular purpose. By participating in the Program, the user confirms that they have read, understood, and agreed to this disclaimer.

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