

Oct 22, 2025

LBM Particulate Matter Sampling Protocol

DOI

<https://dx.doi.org/10.17504/protocols.io.4r3l21b64g1y/v1>

Ajay Pillarisetti¹, Christopher LeBoa¹, Nadia Rimi², Laura H. Kwong¹, Shohanur Rahman¹

¹UCB; ²icddr,b



Christopher LeBoa

UCB

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.4r3l21b64g1y/v1>

Protocol Citation: Ajay Pillarisetti, Christopher LeBoa, Nadia Rimi, Laura H. Kwong, Shohanur Rahman 2025. LBM Particulate Matter Sampling Protocol. [protocols.io https://dx.doi.org/10.17504/protocols.io.4r3l21b64g1y/v1](https://dx.doi.org/10.17504/protocols.io.4r3l21b64g1y/v1)

License: This is an open access protocol distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working

We use this protocol and it's working

Created: October 09, 2025



Last Modified: October 22, 2025

Protocol Integer ID: 229467

Keywords: lbm particulate matter sampling protocol conducted, particulate matter sampling, live bird market

Funders Acknowledgements:

National Institutes of Health

Grant ID: D43TW010540

Abstract

Conducted for particulate matter sampling of live bird markets using PATS+ monitors

Materials

- PATS+ monitors (x4)
- Zeroing box
- Data collection tablet

Before start

1. Ensure PATS+ monitors are in backpack ready for sampling collection and are labeled with the locations each will be placed at



On the day before sampling

- 1 Ensure PATS+ monitors are in backpack ready for sampling collection and are labeled with the locations each will be placed at

On the sampling day

- 2 Perform Zeroing of each PATS+
 - 2.1 Remove PATS+ from the bag. PATS+ should still be sleeping; the LED should flash red twice every five seconds.
 - 2.2 Use a paperclip or small pin to push the PATS+ button. Hold the button until the LED flashes red and then green. Release the button. The PATS+ status LED will alternate red-green for every other second.
 - 2.3 Place the PATS+(s) inside the zero chamber.
 - 2.4 Seal the chamber and squeeze the hand pump 40 times. PATS+ must zero for 10 minutes at the site of sampling; the zero box should be out of direct sunlight and not moved during the zeroing period.
 - 2.5 Remove the PATS+ from the zeroing box and ensure that the light is now flashing green.
- 3 Place PATS+ next to the shop worker's sitting area.
- 4 Place another PATS+ outside
- 5 Use notebook to record locations of PATS+ monitor placement and associated start time.
- 6 Record for one hour.
- 7 At the end of the recording time, retrieve PATS+.



- 7.1 Ensure the light is still flashing (1 green flash every two seconds).
- 7.2 If the light is not still flashing try to re-zero the box by pressing it with a toothpick again.
- 8 Stop the recording
- 8.1 Press the button with a pin or paperclip. Hold the button until the LED flashes red once and green once and release the button. The status LED will now flash green-red-red every other second, indicating it is in post-sampling zero mode.
- 9 Place the PATS+(s) inside the zero chamber.
- 10 Seal the chamber and squeeze the handpump 40 times.
- 10.1 PATS+ must zero for 10 minutes at the site of sampling; the zero box should be placed out of direct sunlight and not moved during the zeroing period.
- 11 Place all items in backpack for returning to lab.
- 12 At lab conduct data cleaning and data download steps.