

Jul 29, 2024

Consensus standard operating procedure for collection of tongue swabs for TB diagnostics

DOI

<https://dx.doi.org/10.17504/protocols.io.kxygxyw54l8j/v1>

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Protocol Citation: Alfred Andama, Amy E Steadman, Charlotte Ahls, Gerard Cangelosi, Anura David, Margaretha de Vos, Karen Heinrich, Midori Kato-Maeda, Adam Penn-Nicholson, Alaina Olson, Lesley Scott, Lindsey Turnbull, Rachel Wood, Kris Weigel, Adithya Cattamanchi 2024. Consensus standard operating procedure for collection of tongue swabs for TB diagnostics.

protocols.io <https://dx.doi.org/10.17504/protocols.io.kxygxyw54l8j/v1>

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Protocol status: Working

We use this protocol and it's working

Created: June 12, 2024

Last Modified: July 29, 2024

Protocol Integer ID: 101656

Keywords: Tongue swab, dorsum tongue, Mycobacterium tuberculosis, tuberculosis, swab collection, tuberculosis tongue swab, tongue swabs for tb diagnostic, tongue swabs for subsequent testing, tongue swab, dry swab, tb diagnostic, tuberculosis molecular assay, dry swab as input material, standard operating procedure, tuberculosis, procedure, subsequent testing, sop, molecular assay, tb

Funders Acknowledgements:

NIH

Grant ID: U01AI152087

NIH

Grant ID: 5R01AI152159-05

NIH

Grant ID: 7U01AI152084-04

Bill & Melinda Gates Foundation

Grant ID: INV-037938

Bill & Melinda Gates Foundation

Grant ID: INV-006726

The Australian Government Department of Foreign Affairs and Trade

Grant ID: Not applicable

The United Kingdom Foreign Commonwealth and Development Office

Grant ID: Not applicable

The German Federal Ministry of Education and Research

Grant ID: Not applicable

Abstract

This standard operating procedure (SOP) outlines the methodology for the collection of tongue swabs for subsequent testing of tuberculosis molecular assays that require a dry swab as input material.

Guidelines

Carefully follow all health and safety regulations according to your institution's policies.

Personnel collecting the tongue swabs must wear a fitted N95 mask to protect from TB aerosols, eye protection (safety glasses or face shield), and disposable gloves. If collecting specimens from multiple individuals, gloves should be changed in between each participant. Mask and eye protection should be worn during the entire collection process and should only be removed after leaving the ward/ location where the sample was collected. Use universal precautions and treat all biological specimens as though they contain potentially infectious agents.

Materials

1. Swab type: Copan FLOQ Swab (Catalog No. 520CS01), 30 mm breakpoint, single use)
2. Collection tube: 2.0mL sterile screw cap with O-ring (Sarstedt 72.694.700, 72.693.465, 72.694.416, 72.694.406; Fisher Scientific BRAND™ 780758; Sigma BR780759-500EA; Omni 19-649; or respective equivalents).
3. Study ID labels
4. Disposable gloves and appropriate personal protective equipment
5. Tube rack
6. Refrigerator or insulated cool box with ice packs at 2-8°C

Before start

Timing of collection: Confirm participant has met NPO (nothing by mouth) criteria for 30 minutes preceding tongue swab collection. Confirm that the participant has not expectorated sputum, brushed their teeth, used mouthwash or tobacco products, or consumed food/liquids. If the participant has engaged in any of these activities in the preceding 30 minutes, delay the tongue swab collection until the 30-minute window has passed.

For studies also collecting a sputum sample for Xpert MTB/RIF Ultra or culture, tongue swabs should be collected before sputum collection.



Collection Method

- 1 Prior to collection, label transport tube as per standard practice.
- 2 Place the collection tube in an upright position in a tube rack. Loosen the cap on the collection tube to facilitate ease of handling during swab insertion. Keep the cap on the collection tube until it is time to insert the swab into the tube.
- 3 Open the swab package carefully at the shaft end, as indicated on the packaging. Only handle the swab by the portion of the shaft farthest from the swab head. To avoid sample contamination, at no point during sample collection should you, touch or handle the portion of the shaft between the swab head and the breakpoint.
- 4 Collect the  tongue swab as per **Section "Swabbing technique"**. [➡ go to step #10](#)
- 5 Immediately after collection, remove the cap of the storage tube.
- 6 Carefully snap the swab handle off at the 30mm breakpoint. Ensure that the cap of the collection tube will seal without obstruction (top of remaining swab shaft sufficiently below tube cap).

Note

Be careful when depositing the swab into the tube. Do not hold the lid of the tube in the same hand as the tube. Instead loosen the cap, place the tube in the tube holder and then remove the cap and set it upside down on the tube holder.

- 7 Dispose of the remaining swab handle as per local guidelines for handling biological waste.
- 8 Seal the tube cap securely. Place the collection tube into a leak-proof biohazard bag and place in refrigerator or cool box (2-8°C) immediately after collection.
- 9 If testing is done off site, the samples should be sent to the laboratory on the same day and no later than 24 hours after collection.



Swabbing Technique

10 Tongue swabs should be collected as followed by trained personnel:

- 10.1 **General Swab Handling:** To avoid potential contamination of the sample, take care to only handle the swab by the portion of the shaft farthest away from the swab head. Do not handle the swab shaft between the breakpoint and the swab head, as this portion will be snapped off into the tube for sample storage/testing.
- 10.2 **Tongue swabbing technique:** Using a back-front and left-right motion, swab (brush) from the back of the top of the tongue and as far back as possible without creating a gag reflex (about $\frac{3}{4}$ of the visible tongue dorsum). Using a timer, swab for 30 seconds, with a focus on the back area of the tongue. Apply enough pressure while swabbing to slightly bend the stem of the swab. Constantly roll (rotate) the swab until the timer is up. All sides of the swab head should be covered with material from the tongue and appear wet.

Transport and Storage

- 11 All swabs should be transported to the testing laboratory on cold chain at  2-8 °C .
- 12 Swabs can be stored for long term at  -80 °C .



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