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CAMbank: Saliva Collection (crude, v1)

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Protocol status: Working

We use this protocol and it's working

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Abstract

This protocol outlines the standardized procedure for crude saliva collection from human subjects for downstream molecular and omics analyses. Designed for flexible use across terrestrial and spaceflight contexts, this method requires no preservatives and uses sterile, DNase/RNase-free collection tubes. Participants are instructed to spit directly into 5 mL screw-cap tubes until a minimum of 1 mL of saliva is obtained. Samples are immediately aliquoted into 500 µL portions in a sterile environment and frozen at -80 °C. This crude saliva collection strategy has been implemented in both pre-flight and in-flight conditions aboard the SpaceX Dragon capsule during the Inspiration4 mission. It enables the collection of sufficient sample volumes (150–4000 µL) to support analyses such as cytokine profiling, viral nucleic acid detection, hormone quantification, and potential transcriptomic or proteomic assays. While the absence of preservatives limits long-term stability at room temperature, crude saliva samples remain valuable for targeted assays and flight-compatible protocols. This protocol supports the broader objectives of the Space Omics and Medical Atlas (SOMA) initiative to develop scalable, modular biospecimen methods for human spaceflight research.

Materials

- Collection tubes (5.0 mL screw-top tube, DNase/RNase-Free)
- Sterile nitrile gloves
- Laminar flow hood
- P1000 pipette & tips
- 2D barcoded tubes
- Cryogenic freezer (-80C)



Preparation

3m

1 Verify that all necessary materials are available and still sterile-sealed.

2m

2 Put on nitrile gloves to ensure sterile handling of the samples.

1m

Sample Collection

6m 30s

3 Get the saliva collection tube (5.0 mL screw-top tube)

1m

4 Spit into the collection tube until the amount of liquid (not including bubbles) reaches the fill line (2.0 mL).

5m

5 Close the lid tightly.

30s

Sample Handling

8m

6 Note the following details:
Subject ID (ex: C####)
Date of Collection (MM-DD-YYYY)
Time of Collection (HH:MM AM:PM)

2m

7 Transfer samples to a laminar flow hood.

1m

8 Using a P1000, carefully aliquot plasma into 2D barcoded tubes at **500µL** each.

5m

Storage

1m

9 Place the aliquots in a cryogenic freezer box at -80C.

1m

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