



Sample: Air, contact/surface, & fingertip samples.

Method: Quantitative culture for bacteria and fungi using appropriate media. The concentrations of viable organisms are expressed as colony forming units per cubic meter (CFU/m³) of air (air plate) or CFU/plate (contact, fingertip plates).

Collection:

Air samples

1. Viable airborne particles (bioaerosols) are collected with an impaction sampler, such as the Surface to Air Sampler (SAS). A dual-head or single-head sampler is acceptable. SAS 180 and 360 samplers are available for rent from U.S. Micro-Solutions.
2. Microbiological growth media used for sampling must support the growth of bacteria and fungi. For dual-head sampling, tryptic soy agar (TSA) and Sabouraud dextrose agar (SDA) may be used for bacteria and fungi, respectively. For single-head sampling, TSA is recommended.
3. Recommended sample volume is 1000 liters (~5.5 minutes at 180 liters of air/minute).

Surface samples

1. Contact (Rodac) agar plates are used for surface sampling. These include TSA with lecithin and polysorbate 80 for bacteria and SDA with lecithin and polysorbate 80 for fungi. These additives are necessary to neutralize the effects of disinfecting agents. TSA may be used for single plate sampling for bacteria & fungi.
2. Select a flat surface area for sampling.
3. Wearing gloves, remove and hold the agar plate lid with one hand, keeping it sterile.
4. With the opposite hand, press and roll the agar surface in one direction across the selected area. Pressure should be the same for every sample. **DO NOT MOVE THE PLATE Laterally**; this will cause confluent bacterial growth and dramatically reduce the resolution of the colonies.
5. Replace the lid on the plate, taking care not to touch the agar surface.
6. Swabs may be used for tight or difficult-to-reach areas.

Gloved fingertip samples

1. TSA agar with lecithin and polysorbate 80 is recommended.
2. Collect fingertip and thumb samples by lightly rolling each onto the agar surface.

Shipping:

1. Clearly label each sample with a Sample Number and complete the Chain of Custody (COC).
2. Seal the rim of each agar plate with electrical tape and place in the sterile bags included with the media or in a Ziploc bag. Place bag(s) in a box with sufficient packing material to prevent damage, along with the completed COC form.
3. Ship samples Monday through Friday for receipt within 24 hours of collection. Friday shipments require a Priority Overnight Saturday delivery label.
4. If samples cannot be shipped within 24 hours, store samples at room temperature. Storing samples in the refrigerator significantly reduces the microorganism counts.