



EBOLA

1. Appropriate Personnel Protective Equipment (PPE)

Before handling samples, the researcher must wear standard personnel protection equipment.



2. Sample Protection



Whole blood in EDTA (a minimum volume of 4 ml) is collected in from live patients. The suspected Ebola sample is carefully handled by placing the sample in a screw-capped test tube which is sealed in a Biohazard bag together with an absorbent material (for possible leaks). This Biohazard bag is then placed in an airtight container prior delivery to the laboratory.

3. Sample Handling and Preparation



The researcher placed the samples inside the Class III Biological Safety Cabinet (by an integrated pass-through with interlocking doors). The test tube is removed from the biohazard bag inside the BSC. Disinfection of every used test tube is done by spraying disinfectant (e.g. 70% ethanol) and wiped dry with paper towel.



Esco Class III BSCs offer the highest level of product, operator and environmental protection from infectious or biohazardous aerosols suitable for microbiological work with agents assigned to biological safety levels 1, 2, 3, or 4. The cabinet has leaked-tested glove assemblies which guarantee maximum protection. The exhaust air is double-filtered through high-quality ULPA filters (per IEST-RP-CC- 001.3) with typical efficiency of >99.999% for 0.1 to 0.3 micron particles, removing infectious agents. The cabinet operates at negative pressure relative to the laboratory in order to prevent migration of pathogenic materials out of the work area.



4. Extraction of Virus Material

Whole plasma (containing the virus) is separated from the blood sample using a centrifuge machine. The extracted plasma is then heated up at 60°C for one hour which inactivates the virus. The collected plasma sample containing the inactive virus is chemically treated for several times to purify and extract the genetic material. The sample is placed in a disinfected tube and out into a cable-tied biohazard bag.

Note: Specimens should be placed in a durable, leak-proof secondary container for transport within the facility. To reduce the risk of breakage or leaks, do not use any pneumatic tube system for transporting suspected Ebola virus disease specimens.



5. De-gowning and Cleaning

The researcher removes the PPE (inner gown, outer disposable gown, shoe covers, boots, hair cover, face shield, outer gloves, inner gloves) inside-out to contain any spills on the gowns. The mask is removed using the straps to prevent touching the mask (avoiding contamination). A structured procedure is required for the proper removal of used PPE. To ensure protection, a designated changing area must be selected. Double gloving provides an extra layer of safety during the PPE removal process.

Note: Prior disposal to a waste-treatment facility, all wastes and used disposable PPEs should be treated with care and undergo proper decontamination.



6. Cleaning Up

The researcher thoroughly washed their hands before transferring the samples to the laboratories for testing and evaluation.

Proper Hand Washing Technique:

- Wet the hands with clean, running water (warm or cold), turn off the tap, and apply soap.
- Lather the hands by rubbing them together with the soap. Be sure to lather the backs of your hands, between your fingers, and under your nails.
- Scrub the hands for at least 20 seconds.
- Rinse well under clean, running water.
- Dry hands using a clean towel or air dry them.