STERLITECH

Schistosome Test Kit

The Sterlitech Schistosome Test Kit is a portable, all-in-one solution designed for the rapid determination of schistosome eggs in urine samples. Detection of schistosome eggs is critical, as schistosomiasis affects hundreds of millions of people worldwide.

The World Health Organization (WHO) recognizes schistosomiasis as one of the most significant parasitic diseases globally, second only to malaria in terms of socioeconomic and public health impact.

Schistosomiasis is classified as a Neglected Tropical Disease (NTD) and is most preva lent in low-income regions of Africa, Asia, and the Americas. Early and accurate diagnosis is essential for disease monitoring, treatment decisions, and control programs.

Principle

Schistosomiasis is a parasitic disease caused by flatworms of the genus Schistosoma. In humans, infection is primarily caused by three species:

- *Schistosoma haematobium* (commonly found in Africa)
- *Schistosoma mansoni* (commonly found in Africa)
- *Schistosoma japonicum* (found in Indonesia, China, and parts of Southeast Asia)

The Sterlitech Schistosome Test Kit operates on a membrane filtration principle. A measured volume of urine is passed through a polycarbonate (PCTE) membrane filter with a defined pore structure. Schistosome eggs present in the urine are retained on the membrane surface and subsequently stained to enhance visibility for microscopic examination and enumeration.

Contents of Kit

Kit inclusion:

- 500 x 13 mm polycarbonate screen membrane filters (Choice of 12, 20, or 30 Qm pore size)
- 5pcs of 13 mm plastic Swinney filter holders
- 2pc of 10 cc syringes
- 1 pair of forceps
- 1 convenient plastic carrying case

Additional Materials and Reagents Required

The following items are required but not included in the kit:

- Personal Protective Equipment
- Microscope
- Microscope Slides
- Lugol's Iodine

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Procedure

1. Don safety glasses and examination gloves.
2. Open the filter holder. Using the forceps, carefully retrieve a new disc filter from its storage box and install in the holder; then securely close the holder. The PCTE membrane filter is thin, translucent and colorless; do not confuse it with the blue separator paper (which is discarded).
3. Agitate the urine sample by gently shaking, or by filling and emptying the syringe into the urine sample bottle at least twice.
4. Draw 10 milliliters (mL) of the urine sample into the syringe. If 10 mL is not available, draw as much as possible and note the volume.
5. Attach the filter holder, as prepared in Step 1, to the outlet of the filled syringe.
6. While carefully holding the syringe and attached filter holder vertically over a waste receptacle, gently expel all the urine sample from the syringe through the filter holder. To ensure that the entire urine sample is forced through the filter and that any eggs are well attached to the filter, detach the holder from the empty syringe, draw in a few mL of air, reattach the holder to the syringe, and gently force the air through the holder.
7. Detach the filter holder from the syringe and carefully open the holder. Using the forceps, carefully remove the filter from the holder and, while maintaining the same orientation, place it on a clean microscope slide.
8. Add one drop of Lugol's iodine on top of the membrane filter. Wait 15 seconds for the stain to penetrate the eggs. This will impart the eggs with an orange tint that improves visibility under microscopic examination.
9. Immediately examine the entire membrane filter using a microscope at low power (typically 10x). Count the total number of eggs on the filter. The infection load is expressed as the number of eggs per 10 mL of urine sample. If the urine sample is less than 10 mL, correct the infection load using the formula below:

$$\textit{Corrected Infection Load} = \frac{\textit{No. of Eggs Counted}}{\textit{Volume (mL) of Urine Sample}} \times 10$$

Reuse and Cleaning of Kit Components

- Reusable components: Syringes and filter holders
- Single-use components: PCTE membrane filters

Only the syringes and filter holders may be reused. After each use, disassemble these components and thoroughly rinse them with clean water, preferably purified water, to ensure that no schistosome eggs remain.

If additional cleaning is desired, detergent and a 1% hypochlorite (bleach) solution may be used.

Although membrane filters may be technically cleanable, reuse is not recommended. The time, effort, and materials required to ensure complete egg removal exceed the cost of using a new membrane filter. Single-use membranes ensure optimal accuracy and reliability of test results.

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