

# New Transport Media to Preserve Viable Parasites, Bacteria and Fungi

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## Abstract:

**Background:** Patients with various infections do not always show positive results in their cultures. Therefore, the purpose of this study is to demonstrate the necessity of a transport medium to preserve bacteria, parasites, and fungi. This medium aids patients in collecting samples to determine their infections, commonly found in urine or feces. Microorganisms can be immediately preserved in the transport medium upon collection by the patient, and this initial step is crucial for maintaining their viability. The preanalytical phase is essential for accurate diagnosis and determining the etiology of infections.

**Methods:** The transport medium referred to in this study was developed by our laboratory. It consists of a tube containing enriched broth and can be stored at room temperature for up to a year. To validate the reliability of this transport medium, various samples were tested, including urine, semen, wounds, eye secretions, and feces. These samples were subjected to different temperatures: 2°C in a refrigerator, 18°C in ambient conditions, and 37°C in a "kangaroo" pouch or incubator. Additionally, the time elapsed between sample collection and transportation to the laboratory was examined. For optimal diagnostic accuracy, samples should be smeared onto the transport medium and kept at normal body temperature for at least two hours. Sending the tube at room temperature to the laboratory poses no issues. All samples were cultured for bacteria on MacConkey agar, EMB (Eosin Methylene Blue) agar, CLED (Cystine-Lactose-Electrolyte Deficient) agar with Andrade Indicator, Blood agar, Chocolate agar, and XLD agar. Fungi were cultured on Potato or Sabouraud agar, while parasites were studied in saline solution and Lugol's iodine.

**Results:** The study analyzed 1600 fecal samples, 700 urine samples, and 100 other samples, such as genital, eye secretions, and wounds. The use of the transport medium resulted in a positive etiology rate of 67.9% for fungi, compared to 73.5% without the medium. Aerobic bacteria and helminth eggs or adults could be preserved in the transport medium for several days without significant difference, and *Giardia lamblia* trophozoites could be maintained for up to seven hours.

**Conclusions:** While there are various commercial transport media available for specific microorganisms, our transport medium offers the advantage of accommodating bacteria, parasites, and fungi, and can be stored at room temperature for extended periods. It is user-friendly, as the transport tube can be carried in a "kangaroo" pouch to maintain samples at body temperature, particularly beneficial for patients living far away or collecting samples at night. This transport medium ensures samples are maintained at body temperature throughout transportation. Its implementation is crucial for obtaining accurate positive cultures, leading to improved diagnostics and facilitating precise treatments based on the identified etiology, thereby safeguarding patient health.

**Key words:** muscular dystrophy; dystroglycanopathy; *tmem5* gene; ngs

## ADVANTAGES OF THE TMT

- IS AN ENRICHED LIQUID
- Low cost
- Used at environmental temperature
- Lasts a year at environmental temperature
- Small size tube
- Light weight
- No special equipments are needed
- Easy to handle by the patient
- **Improves diagnostics and a precise treatment**

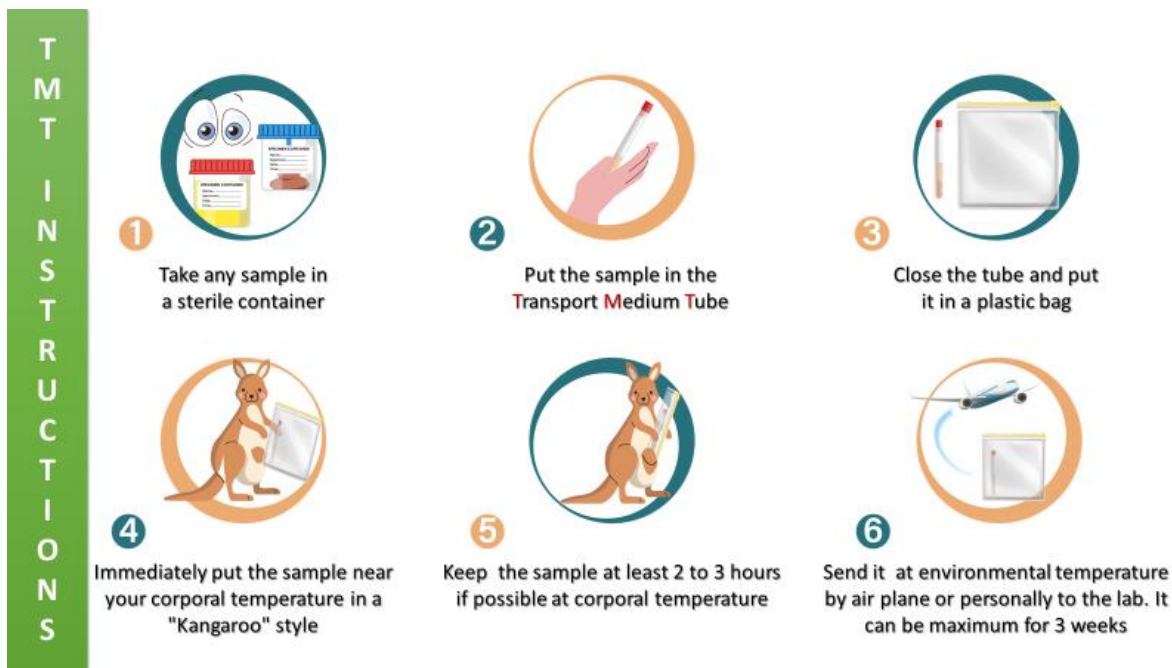
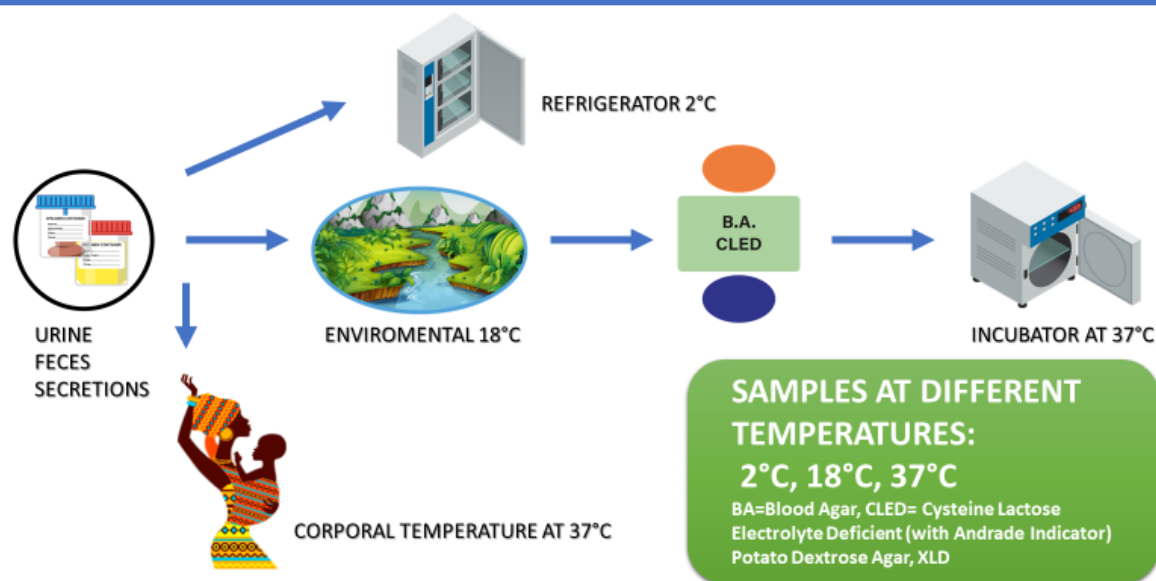


### **TMT FOR:** PARASITES, FUNGI & BACTERIAS

- Can be used for  
**ANY SAMPLE**
- Can be handle by  
the patient



TO VALIDATE THE TMT: SAMPLES WERE TESTED IN DIFFERENT TEMPERATURES AND DIFFERENT TIMES BETWEEN COLLECTION & TRANSPORTATION TO BE ANALYZED



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