Gum Listeria Medium

M1607

Intended Use:

Recommended for the isolation of *Listeria monocytogenes* from clinical and non-clinical specimens.

Composition**

Ingredients	Gms / Litre
Tryptone	5.700
Soya peptone	1.000
Dextrose (Glucose)	0.830
Sodium chloride	1.700
Dipotassium hydrogen phosphate	0.830
Magnesium chloride	0.330
Nalidixic acid	0.050
Gellan gum	8.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 18.44 grams in 1000 ml purified / distilled water. Mix thoroughly. Heat to boiling with frequent agitation to dissolve the medium. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Many media with agar have been developed to isolate and cultivate *Listeria monocytogenes*. But when the colonies are observed by special optical illumination, due to opaqueness of agar there is interference in the colour and characteristics of the colonies. Hence Martin et al (1) experimented with various formulations and found replacing the agar with self-gelling gellan gum (2) resulted in the formation of a transparent medium. This helped in colonial visualization and identification of *Listeria* using Henrys Oblique Light System (3). The Henrys oblique light system consists of a 6-volt lamp projected onto a concave mirror to the underside of the stage of a stereomicroscope at 45° angle, which provides the transmitted oblique light. The medium contains tryptone and soya peptone, which act as the nitrogen and carbon source. Dextrose is an energy source. Sodium chloride and magnesium chloride salt provide essential ions. Dipotassium phosphate provides buffering to the medium. Nalidixic acid inhibits gram-negative bacteria. Gellan gum, a solidifying agent provides more transparency to the medium than agar.

Type of specimen

Clinical samples and Dairy samples.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (5,6).
For food samples, follow appropriate techniques for sample collection and processing as per guidelines (11).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In vitro diagnostic Use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Further biochemical and serological tests must be carried out for further identification.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 0.8% Gellan gum

Colour and Clarity of prepared medium
Pale to light yellow coloured, opalescent gel forms in Petri plates

Reaction
Reaction of 1.84% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH
7.00-7.40

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18- 24 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Escherichia coli ATCC 25922	50-100	none-poor	<=10%
Listeria monocytogenes ATCC 19112	50-100	good	40-50%

Reference

1.Martin R. S., Sumarah R. K. and MacDonald M. A., 1984, Clin. Invest. Med., 7:233.
2.Shungu D., Valiant M., Tutlane V., Weisberg E., Wessberger B., Koupal L., Gadebusch H. and Stapley E, 1983, Appl. Env. Microbiol., 46:840.
3.Henry, 1933, J. Infect. Dis., 52:374.