



Gum Listeria Medium

M1607

Gum Listeria Medium (Gum Base Nalidixic Acid Medium) is used for the isolation of *Listeria monocytogenes* from clinical and non-clinical specimens.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.700
Papaic digest of soyabean meal	1.000
Dextrose	0.830
Sodium chloride	1.700
Dipotassium 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 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. 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 casein enzymic hydrolysate and papaic digest of soyabean meal, 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.

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

M1607: Cultural characteristics observed after an incubation at 35-37°C for 18- 24 hours.

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

Storage and Shelf Life

Store below 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.

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.

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