Technical Information

Gelatin Phosphate Salt Agar (GPS Agar)

Product Code: DM 1921

Application: - Gelatin Phosphate Salt Agar is used for characterization of *Vibrio cholerae* from food.

Composition**

Ingredients	Gms / Litre
Gelatin	10.000
Sodium chloride	10.000
Dipotassium phosphate	5.000
Agar	15.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Vibrio cholerae is a non-halophilic organism which cannot grow in media having concentration of sodium chloride more than 5- 6% and is able to grow in media without NaCl [(1)]. *V.cholerae* is the etiological agent of a secretory diarrhea spread by the faecal-oral route due to ingestion of contaminated water or food. The most critical virulence factor of *V.cholerae* is CT, which is responsible for the main symptom of the cholera disease [(2)]. Gelatin Phosphate Salt Agar is a non-selective medium formulated as per APHA [(3)] and used for plating enrichment cultures of *V.cholerae isolated* from seafoods or vegetables.

Gelatinase enzyme producing *Vibrio*'s degrade gelatin and form small colonies, which are transparent with a cloudy halo. Gelatinase negative organisms show a satellite growth and may surround the colonies of *V.cholerae* on this medium. Dipotassium phosphate buffers the medium while sodium chloride maintains osmotic balance.

For enrichment and plating weigh 25 grams of sample in two jars of 500 ml capacity. Blend the vegetables or seafood into small pieces. Add 225 ml of GPS Broth to one jar and the same quantity of Alkaline Peptone Water (DM1618) to another and mix both the samples. Incubate each broth at 35 ± 2°C for up to 8 hours. If desired, then enumerate the bacterial count by MPN technique. Prepare the dried plates of media like TCBS Agar (DM1189) and another like GPS Agar (DM1921), nonselective media like (Cellobiose Polymyxin Colistin (CPC) Agar (DM2241) and Sodium Dodecyl Sulphate Polymyxin Sucrose (SDS) Agar (DM2155) may be also included. From the surface growth of each broth culture, inoculate two plating media by streaking. Incubate overnight at 35°C for 18 to 24 hours. From each plated medium, subculture to TN Agar (DM1950) slants or Motility Test Medium (DM1260) stabs and incubate overnight at 35° ± 2°C.

Methodology

Suspend 40 grams of powder media in 1000 ml warm distilled water. Shake well & heat to dissolve the medium completely. Dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance
Off white to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Light yellow coloured, clear to slightly opalescent gel

Reaction
Reaction of 4% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH range 7.00-7.40

Cultural Response/ characteristices
DM 1921: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Colony characteristics
Vibrio cholerae ATCC 15748	50-100	good-luxuriant	transparent colonies with a cloudy halo

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^{o} in sealable plastic bags for 2-5 days.

Further Reading

1. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1996, 14 th Edition, Churchill Livingstone
2. Bruno Gomez-Gil and Ana Roque, Isolation, Enumeration and Preservation of the Vibrionaceae, Thompson F. L., Austin B. and Swings J., The Biology of Vibrios, ASM press.
3. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA,Washington, D.C.

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