Vogel-Johnson Agar Medium

MU023

Intended use

Vogel-Johnson Agar Medium with addition of potassium tellurite is used for selective isolation of coagulase positive, mannitol fermenting *Staphylococcus aureus* from heavily contaminated food and clinical specimens in accordance with United States Pharmacopoeia.

Composition**

Ingredients	Gms / Litre
Tryptone #	10.000
Yeast extract	5.000
Mannitol	10.000
Dibasic potassium phosphate	5.000
Lithium chloride	5.000
Glycine	10.000
Phenol red	0.025
Agar	16.000
pH after sterilization (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Pancreatic digest of Casein

Directions

Suspend 30.51 grams in 500 ml purified/ distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and add 10 ml of sterile 1% Potassium Tellurite solution (FD052). Mix gently and pour into sterile Petri plates.

Principle And Interpretation

Vogel-Johnson Agar Medium is prepared according to the formula of Vogel and Johnson (1) and is recommended for the microbial limit test (pharmaceutical testing) in USP (2). Originally it was developed by Zebovitz (3) as a Tellurite Glycine Agar, a selective medium for the detection of coagulase positive Staphylococci. This medium is used to detect *Staphylococcus* in pharmaceutical and cosmetics products (4). *Staphylococcus* in prevalent pathogen in food borne poisoning due to its enterotoxin production. It is commensal found on skin and scalp of human body.

Vogel-Johnson modified the medium by adding phenol red as a pH indicator and increased the mannitol quantity. Tryptone and yeast extract provide nitrogenousand carbonaceous compounds,long chain amino acids, vitamin B complex and other growth nutrients. Dibasic potassium phosphate gives buffering capacity to the medium. During first 24 hours of incubation, contaminating organisms are almost inhibited by tellurite, lithium chloride and high glycine content. *Staphylococcus aureus* may be inhibited by these inhibitors but get compensated by mannitol and glycine. Coagulase-positive Staphylococci reduce potassium tellurite to metallic free tellurium and thus produce black colonies surrounded by yellow zones. This yellow colour is due to phenol red indicator, which turns yellow in acidic condition by the fermentation of mannitol. Prolonged incubation may result in the growth of black coagulase negative colonies.

Type of specimen

Clinical samples - Blood ; Food samples ; Pharmaceutical samples

Specimen Collection and Handling

For pharmaceutical samples, follow appropriate techniques for handling specimens as per established guidelines (2).
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5).
For food samples, follow appropriate techniques for sample collection and processing as per guidelines (7,8).
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 guidleines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets

Limitations :

Further confirmation can be carried out by biochemical and serological tests.

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

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.6% Agar gel.

Colour and Clarity of prepared medium

Red coloured clear to slightly opalescent gel forms in Petri plates.

pH

7.00-7.40

Growth Promotion Test

In accordance with the method of USP.

Cultural Response

Cultural characteristics observed with added 1% Potassium Tellurite solution (FD052),after an incubation at 30-35°C for 18-48 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony	Incubation period
Test for specified microorganisms					
Staphylococcus aureus subsp. aureus ATCC 6538 (00032*)	50 -100	luxuriant	>=50 %	black colony surrounded by yellow zone	18 -48 hrs
Additional Microbiological testing					
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	50 -100	luxuriant	>=50 %	black surrounded by yellow zone	18 -48 hrs
Staphylococcus epidermidis ATCC 12228 (00036*)	50 -100	fair - good	30 -40 %	translucent to blackish	18 -48 hrs
Proteus mirabilis ATCC 25933	50 -100	none-poor	0 -10 %	yellow	18 -48 hrs
Escherichia coli ATCC 8739 (00012*)	>=10^3	inhibited	0 %		>=48 hrs

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle inorder to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label.

Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (7,8).

Reference

1. Vogel and Johnson, 1960, Public Health Lab., 18:131.
2. The United States Pharmacopoeia, 2018. United States Pharmacopoeial Convention, Inc. Rockville, MD.
3. Zebovitz, Evans and Niven, 1955, J. Bacteriol., 70:686.
4. Bacteriological Analytical Manual, 8th Edition, Revision A, 1998. AOAC, Washington D.C.
5. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
6. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
7. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
8. Jorgensen,J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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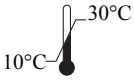
IVD — In vitro diagnostic medical device

CE Marking



Storage temperature

Do not use if package is damaged

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