

Bi.G.G.Y. HiVeg™ Agar (Nickerson HiVeg™ Medium)

MV217

Intended Use:

Recommended for detection, selective isolation, differentiation and presumptive identification of *Candida albicans* and *Candida tropicalis* from various samples.

Composition**

Ingredients	g / L
Yeast extract	1.000
Glycine	10.000
Dextrose (Glucose)	10.000
Ammonium Bismuth Citrate	5.000
Sodium sulphite	3.000
Agar	16.000
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 45 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. **DO NOT AUTOCLAVE OR OVERHEAT.** Overheating will destroy the selective properties. Cool to 45-50°C. Disperse the flocculant precipitate formed by swirling prior to dispensing into Petri plates.

Principle And Interpretation

In a study of sulphite reduction by yeasts, the ability of many types of yeast to reduce bismuth sulphite was noted. Growth on an acidic or neutral medium containing bismuth sulphite produced black colonies because of the extra cellular reaction of the bismuth sulphite to bismuth sulphide. Bi.G.G.Y. Agar (Nickerson Agar) was originally formulated by Nickerson (1,2) and further modified by Haley (3) following study of sulphite reduction. This medium is only a part of the identification process of organisms. Other tests may be required. Bi.G.G.Y. HiVeg™ Agar is prepared by using vegetable peptones in place of animal based peptones which make the media free of BSE/TSE risks. Bismuth ammonium citrate and sodium sulphite together act as selective agents for *Candida* species suppressing bacterial growth, at the same time indicating substrate reduction to yield bismuth sulphite which helps to presumptively identify *Candida* species. Yeast extract, dextrose and glycine serve as nutrients. Bi.G.G.Y. Agar can be directly inoculated with clinical specimens such as tissues, skin scrapings, hair, nail clipping etc. (4, 5). Do not use slants of medium. Precipitate present in molten medium should be uniformly suspended while plating the agar. This medium may be used for the isolation and presumptive identification of *C. albicans* and *C. tropicalis* from sputum (3) and vaginal smears (6).

Type of specimen

Please add specimens

Specimen Collection and Handling:

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

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.
2. **DO NOT AUTOCLAVE OR OVERHEAT.** Overheating will destroy the selective properties.

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 1.6% Agar gel.

Colour and Clarity of prepared medium

Light amber coloured, opalescent gel (with a dispersible flocculant precipitate) forms in Petriplates

Reaction

Reaction of 4.5% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

Cultural characteristics observed after an incubation at 25-30°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colony morphology
<i>Candida albicans</i> ATCC 10231 (00054*)	50-100	luxuriant	≥50%	smooth, circular intensely brown black, no colour diffusion and no sheen
<i>Candida krusei</i> ATCC 24408	50-100	luxuriant	≥50%	large flat, wrinkled silvery brown, black colonies with brown peripheries, yellow halo
<i>Candida tropicalis</i> ATCC 750	50-100	luxuriant	≥50%	smooth discrete, dark brown with black centres, diffused blackening after 72 hours, sheen, slight mycelial fringe
<i>Escherichia coli</i> ATCC 25922 (00013*)	≥10 ⁴	inhibited	0%	
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ⁴	inhibited	0%	
<i>Candida pseudotropicalis</i>	50-100	Good	40-50%	Dark reddish brown, glistening colony

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order 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. 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (7,8).

Reference

1. Nickerson W.J., 1947, The Chronica, Botanica Co.
2. Nickerson W.J., 1953, J. Inf. Dis., 93:43.
3. Haley L.D., 1959, Trans. N.Y. Acad. Sci., 21(8):708.
4. Lennette, Balows, Hausler and Shadomy (Eds.), 1985, Manual of Clinical Microbiology, 4th ed., A.S.M. Washington, D.C.
5. MacFaddin J.F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
6. Mendel E.B., Naberman S. and Hall D. K., 1960, Obstet and Gynec. 16, 180-184.
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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