Technical Information

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

Product Code: DM 1217

Application: Bi.G.G.Y. Agar (Bismuth Glycine Glucose Yeast Agar) (Nickerson Agar) is a selective medium used for detection, selective isolation, differentiation and presumptive identification of *Candida albicans* and *Candida tropicalis* .

Composition**

Ingredients	Gms / Litre
Yeast extract	1.000
Glycine	10.000
Dextrose	10.000
Bismuth ammonium 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

Principle & Interpretation

The ability of many types of yeast to reduce bismuth sulphite is characteristic feature. 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 also be required. Bismuth ammonium citrate and sodium sulphite together act as selective agents for *Candida* species suppressing bacterial growth, at the same time reducing the bismuth sulphite which to helps in presumptively identification of *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]. Never use slants as 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].

Methodology

Suspend 45 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. DO NOT AUTOCLAVE OR OVERHEAT. Overheating will destroy the selective properties. Disperse the flocculant precipitate formed by swirling prior to dispensing into Petri plates.

Quality Control

Physical 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 range 6.60-7.00

Cultural Response/Characteristics
DM1217: Cultural characteristics observed after an incubation at 25-30°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colony morphology
Candida albi cans ATCC 10231	50-100	Luxuriant	>=50%	smooth, circular intensly brown black, no colour diffusion and no sheen
Candida kruisei ATCC 24408	50-100	Luxuriant	>=50%	large flat, wrinkled silvery brown, black colonies with brown peripheries, yellow halo
Candida tropicalis ATCC 750	50-100	Luxuriant	>=50%	Smooth discrete, dark brown with black centres, Diffused blackening after 72 hours, sheen, slight mycelial fringe
Escherichia coli ATCC 25922	50-100	Inhibited	0%	
Staphylococcus aureus ATCC 25923	50-100	Inhibited	0%	
Candida pseudotropicalis	50-100	Good	40-50%	Dark reddish brown, glistening colony

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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

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, Obstel and Gynec.16, 180-184.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate
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