BiGGY AGAR

- For in vitro use only - Catalogue No. PB64

Our BiGGY Agar is used for the selective isolation, differentiation, and presumptive identification of *Candida* species.

BiGGY (Bismuth Sulfite Glucose Glycine Yeast) Agar was formulated by Nickerson and is often referred to as Nickerson Agar. Nickerson noted the reduction of bismuth sulfite by *Candida* species and this characteristic proved useful in the differentiation and presumptive identification of *Candida* species.

The growth components of the medium include yeast extract, glycine, and dextrose. The growth of *Candida* species in a neutral environment results in pigmentation (reddish-brown to black) of the yeast colony due to the reduction of bismuth sulfite to bismuth sulfide; some species may also produce a color change in the surrounding medium. Bismuth sulfite also acts as an inhibitor of bacterial growth making the medium selective. Pigmented colonies of bacteria and molds capable of growing on this medium can be easily differentiated from *Candida* based on microscopic examination. Different *Candida* species have specific colonial morphologies and growth patterns that can be visualized after the prescribed incubation period.

Formula per Litre of Medium

Yeast Extract	1.0 g
Glycine	10.0 g
Dextrose	10.0 g
Bismuth sulfite indicator	8.0 g
Agar	15.0 g

pH 6.8 ± 0.2

Recommended Procedure

1. Allow medium to adjust to room temperature prior to inoculation.
2. Using a direct inoculum from the specimen, perform a four-quadrant streak to obtain well-isolated colonies.
3. Incubate aerobically at room temperature or at 35°C, if necessary.
4. Examine daily for up to 3 days.

Interpretation of Results

A presumptive positive for *Candida* species is the presence of brown or black colonies. *Candida* colony morphology is as follows:

C. albicans – Smooth, circular brown-black colonies; slight mycelial fringe; no color diffusion into surrounding medium; no sheen

C. tropicalis – Smooth, discrete brown-black colonies with black centers; slight mycelial fringe; diffuse blackening of medium after 72 hours; sheen

C. pseudotropicalis – Medium, dark reddish-brown glistening colonies; slight mycelial fringe; no diffusion

C. krusei – Large , flat, wrinkled silvery brown-black colonies with brown edge; yellow halo

C. parakrusei – Medium, flat, dark reddish-brown glistening colonies with lighter edge; extensive yellow mycelial fringe

C. stellatoidea – Medium, flat, dark brown colonies; very light mycelial fringe

Additional biochemical and/or serological tests should be performed on isolated colonies from pure culture to in order to complete identification.

- *A flocculent precipitate is normally observed in the medium*

- *Dermatophytes and molds are rarely observed but are easily recognized by their aerial mycelia*

Quality Control

After checking for correct pH, colour, depth, and sterility, the following organisms are used to determine the growth performance of the completed medium.

Organism	Expected Result
Candida albicans ATCC 10231	Brown-black colonies, no diffusion, no sheen
Candida tropicalis ATCC 750	Brown-black colonies, black diffusion with sheen
Escherichia coli ATCC 25922	Inhibition

Storage and Shelf Life

Our BiGGY Agar should be stored at 4°C to 8°C and protected from light. The medium side should be uppermost to prevent excessive accumulation of moisture on the agar surface. Under these conditions the medium has a shelf life of 6 weeks from the date of manufacture.

References

1. Nickerson WJ. Biology of pathogenic fungi. Waltham,MA: The Chronica Botanica Co., 1947.
2. Nickerson WJ. Reduction of inorganic substances by yeasts. I. Extracellular reduction of sulfite by species of *Candida*. J Infect Dis 1953; 93:43-56.
3. Barr FS, Collins GF. A rapid method for the isolation and identification of *Candida*. South Med J 1966; 59:694-7.
4. MacFaddin JF. Media for isolation, cultivation, identification, maintenance of bacteria, Vol I. Baltimore: Williams & Wilkins, 1985.
5. Murray PR, Baron EJ, Pfaller MA, Tenover FC, Yolken RH. Manual of clinical microbiology. 7th ed. Washington D.C.: ASM, 1999.

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