Biggy Agar

Cat. 1006

For the isolation and presumptive identification of Candida species.

Practical information

Aplications	Categories
Selective isolation	Candida

Industry: Clinical

CE
IVD

Principles and uses

Biggy Agar is the abbreviation for Bismuth Glucose Glycine Yeast Agar. It is used to isolate and differentiate Candida albicans and Candida tropicalis, and to differentiate the species according to the Nickerson method. Nickerson discovered that Candida albicans can be differentiated from other Candida spp. on this medium based on colony morphology.

Yeast extract is a source of vitamins, particularly of the B-group essential for growth. Glycine stimulates growth. Dextrose is the fermentable carbohydrate providing carbon and energy. Candida spp reduce bismuth sulfite to bismuth sulfide forming brown to black colonies. Bismuth ammonium citrate and Sodium sulfite inhibit bacterial growth without affecting the growth of Candida species.

The different species of Candida produce different kinds of infections. Candidiasis, the most commonly encountered opportunistic fungal infection, is mostly caused by Candida albicans. Candida tropicalis and Candida glabrata infections occur less often. Candida spp are present in clinical specimens resulting from environmental contamination, colonization, or a disease process.

Formula in g/L

Bacteriological agar	16	Dextrose	10
Glycine	10	Sodium sulfite	3
Yeast extract	1	Bismuth Ammonium Citrate	5

Preparation

Suspend 45 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. AVOID OVERHEATING. DO NOT AUTOCLAVE. Cool to 45-50 ºC, mix well and dispense into plates.

Instructions for use

For clinical diagnosis, the type of sample is vaginal, buccal and of any type in general.
- Inoculate on the surface. Parallel striae with the handle or hyssop.
- Incubate in aerobic conditions at 25±2 ºC for 18-72 hours, and up to 5 days if necessary.
- Reading and interpretation of results.

Inoculation onto slanted surfaces is not generally satisfactory.

Characteristics of the colonies:
- Candida albicans: brownish red colonies with brown centers; no shine.
- C. krusei: Large, flat reddish brown colonies with black glossy top, brown border and yellow halos.
- C. tropicalis: Brown colonies with
black centers and brightness, darkening
diffuse from the surrounding medium.
- C. pseudotropicalis: Large, flat reddish brown colonies, with mycelial edge.
- C. parakrusei: Colonies frequently
wrinkled, medium-sized, dark reddish brown color with mycelial yellowish edge.
- C. galabrata: Light-pale brown colonies.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Beige	White-opaque	6,8±0,2

Microbiological test

Incubation conditions: (25±2 ºC / 18 -72 hours, up to 5 days).

Microrganisms	Specification	Characteristic reaction
Candida albicans ATCC 10231	Good growth	Brown-to-black colony
Candida pseudotropicalis ATCC 14245	Good growth	Brown-to-red colony
Escherichia coli ATCC 25922	Inhibited growth	
Staphylococcus aureus ATCC 25923	Inhibited growth	

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Nickerson, W.J. 1953. Reduction of inorganic substances by yeasts. I. Extracellular reduction of sulfite by species of Candida. J. Infect. Dis. 93:43.
Warren, N.G., and K.C. Hazen. 1955 Candida, Cryptococcus and other yeasts of medical importance, p. 723-737.
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