Product :
NICKERSON AGAR (BiGGY Agar)

Also known as

BiGGY Agar; Nickerson Agar; Bismuth Glycine Glucose Yeast Agar; Nickerson *Candida* Selective Agar

Specification

Solid medium for the isolation and identification of *Candida spp.*

Formula * in g/L

Yeast extract..... 1,0
Dextrose..... 10,0
Glycine..... 10,0
Sodium sulfite..... 3,0
Ammonium bismuth citrate..... 5,0
Agar..... 15,0

Final pH 6,8 ±0,2 at 25 ºC

* Adjusted and /or supplemented as required to meet performance criteria

Directions

Suspend 44 g of powder in 1 L of distilled water and bring to the boil. Dispense in tubes or Petri dishes, stirring the precipitate before pouring. Do not autoclave. Avoid overheating.

Description

Nickerson Agar is suitable for the isolation and identification of *Candida* species. The medium is made according to the general principles of Bismuth-Sulfite Agar. An inhibitory and differential medium using a high concentration of glycine for selectivity. This medium is highly inhibitory, and does not allow bacterial growth, however most *Candida spp.* grow freely and rapidly. Occasionally, tiny colonies of bacteria or highly repressed moulds may appear. Bacterial development may be totally prevented by adding neomycin sulfate 2 mcg/mL to the medium before dispensing. At this concentration the antibiotic will not affect the development or appearance of yeast.
The appearance of the colonies in this medium after an incubation of 48-72 hours at 24-30ºC is as follows:

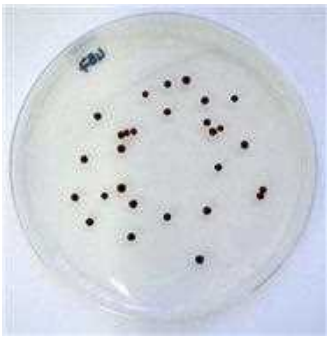
- *Candida albicans*: Creamy colonies, very convex, circular with very slight mycelial border and black or dark brown in colour. It has no metallic sheen or diffused pigment, even after 72 hours of incubation.
- *Candida tropicalis*: Acuminated colonies, creamy, irregular and with slight mycelial borders. Dark brown with black centre. After 72 hours of incubation the colonies may take on a metallic sheen and produce a diffused zone of pigment.
- *Candida krusei*: Big and plain colonies, with irregular borders. Brown colour, darker in the centre. A yellow halo appears around the colony.
- *Candida parakrusei*: Plain colonies, average size, irregular. Dark red centre and light red borders, but when the border is mycelial it looks yellow.
- *Candida pseudotropicalis*: Big and plain colonies, dark red colour with mycelial border.
- *Candida stellatoidea*: Average size plain colonies, dark brown colour, without mycelial development.
- *Rhodotorula*: Creamy convex colonies, with irregular border and colours ranging from pink to orange.
- Moulds in general: Restricted colonial growth and cottony appearance.

The work methodology of each laboratory may presents variations in temperatures and times of incubation. Each laboratory must evaluate the results according to its specifications.
To maintain these colony characteristics it is important that the medium is freshly prepared and not reheated or overheated.
Remarks: The culture medium opalescence is correct, and this facilitates the contrast of the colonies.
A decrease in pH is normal and does not affect performance.

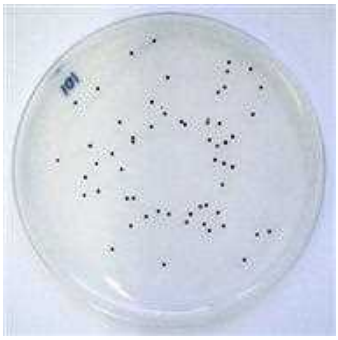
Quality control

Incubation temperature: 25 ±1ºC **Incubation time:** 48-72h
Inoculum: Practical range 50-300 CFU. Min. 50 CFU (Productivity) / 10^4-10^6 CFU (Selectivity).

Microorganism	Growth	Remarks
Escherichia coli ATCC® 25922	Fair to poor	Selectivity
Candida albicans ATCC® 10231	Good	Dark brown colonies
Candida tropicalis ATCC® 1369	Good	Dark brown colonies
Staphylococcus aureus ATCC® 25923	Partial Inhibited	Selectivity


Candida tropicalis ATCC 1369


Uninoculated Plate


Candida albicans ATCC 10231

References

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· FORBES, B.A., D.F. SAHM & A.S. WEISSFELD (1998) Bailey & Scott's Diagnostic Microbiology. Mosby. St Louis. MO. USA.
· ISENBERG, H.D. (1995) Clinical Microbiology Procedures Handbook. ASM Press. Washington. DC. USA.
· MacFADDIN, J.D. (1985) Media for isolation-cultivation-identification-maintenance of medical bacteria. William & Wilkins. Baltimore. MD. USA.
· MURRAY, P.R., E.J. BARON, J.H. JORGENSEN, M.A. PFALLER & R.H. YOLKEN (Eds) (2003) Manual of Clinical Microbiology. 8th ed. ASM Press. Washington. DC. USA.
· NICKERSON (1953) Reduction of Inorganic substance by yeast I. Extracellular reduction of sulfite by species of Candida J. Inf. Dis 93:4.

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 ºC to 30 ºC).