YGC/Agar
(Yeast - Glucose - Chloramphenicol)

355-5489
356-4104

DEFINITION
Medium used for the enumeration of yeasts and molds in the analysis of food products.

STANDARDS
FOOD MICROBIOLOGY
- **NF ISO 7698 (August 1991):** Cereals, leguminous products and derivative products - Enumeration of bacteria, yeasts and moulds (IC: V03-763).

- **NF ISO 7954 (August 1988):** Microbiology - General guidelines for the enumeration of yeasts and molds. Colony-count technique at 25℃ (IC: V08-022).

- **FIL 94B (1991):** Milk and milk products - Enumeration of yeasts and molds by colony count at 25℃.

PRINCIPLE
The nutrient substances provided by yeast extract and the glucose used as energy source favor the growth of yeasts and moulds. The presence of chloramphenicol, a thermostabile broad-spectrum antibiotic, inhibits the growth of contaminant bacteria.

PRESENTATION
- **Ready-to-use**
  100 ml x 6 bottles **code 355-5489**

- **Dehydrated**
  500 g **code 356-4104**

STORAGE
- Ready-to-use: + 2℃ to 25℃
- Dehydrated: + 15℃ to 25℃, in carefully-sealed bottles in a cool, dry place.
- Expiration date and batch number are shown on the package.

THEORETICAL FORMULA

Yeast extract	5 g
Glucose	20 g
Chloramphenicol	0.1 g
Agar	16 g
Disilled water	1,000 ml

Final pH (25℃) = 6.6 ± 0.2

OTHER PRODUCTS REQUIRED (NOT SUPPLIED)
- Distilled water

EQUIPMENT REQUIRED (NOT SUPPLIED) (non-exhaustive)
- Scales
- Sterile weighing bags
- Grinder
- Hotplate
- Mixer-homogenizer
- 100 ml Pyrex bottles with autoclave-proof stoppers
- Sterile Petri dishes (Ø = 90 mm)
- Sterile Pasteur pipettes (0.1 ml, 1 ml, etc)
- Sterile spreaders
- Water-bath precise to ± 1℃
- Thermostatically-controlled incubator or incubation room, precise to ± 1℃
- Autoclave
- All usual laboratory equipment.

PREPARATION OF DEHYDRATED MEDIUM
Always shake before use.
Dissolve 41.1 g of powder in 1 liter of distilled water. Wait for 5 minutes, then mix until a homogenous suspension is obtained. Heat gently swirling frequently, then bring to boiling point until completely dissolved.
Dispense 100 ml per bottle, then sterilize in autoclave at 121℃ (± 1℃) for 15 minutes.

Reconstitution ratio: 41.1 g/l.
500 g of powder makes 12.1 liters of medium.

PROTOCOL
N.B.: In cases where heavy contamination by Gram negative bacteria is suspected (particularly in meat or raw fish), it is recommended that a solution of Gentamicin be added to the Y.G.C. medium (final concentration = 100 mg/l), previously cooled to 44℃- 47℃.

- **Inoculation**

Surface
- Spread 0.1 ml of test sample or 0.1 ml of the stock solution (other products) and/or 0.1 ml of its decimal dilutions on the surface of the “dried” agar.
- Leave to dry.

Depth
- Transfer 1 ml of sample or 1 ml of stock suspension (other products) and/or 1 ml of its decimal dilutions.

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- Pour 12 to 15 ml of medium, melted and cooled to 44℃- 47℃.
- Homogenize and leave to cool on a cool, level surface.

• Incubation

Turn over the plates and incubate at 25℃ (± 1℃) for 3 to 5 days, depending on the standards.

READING AND INTERPRETATION

• Colony count (UFC)

Enumerate the colonies on each plate after 3, 4 and 5 days, according to the standards.

N.B.:

- *If, after the last day of incubation, it is difficult to count highly isolated colonies, use the counts obtained on the previous day(s).*
- *If necessary, distinguish colonies of yeasts and molds from colonies of bacteria by microscope examination (morphological characteristics).*
- *In general, select plates containing fewer than 150 colonies (minimum 15).*
- *Depending on the calculation method, plates containing fewer than 15 colonies or no colonies can be selected (small number estimation).*

• Expression of results/Calculations

For the calculation method, refer to standard NF ISO 7218 and the specific standard.

PRECAUTIONS

- Avoid prolonged heating during melting.
- The medium may look frothy after gelification in bottles. It nevertheless keeps all its qualities as through its appearance is changed by melting and shaking.
- The time lapse between the end of preparation of the stock solution (or the 10^{-1} dilution in the case of a solid product) and the moment when the dilutions come into contact with the culture medium must not exceed 15 minutes.
- The Petri dishes should be handled with care in order to avoid the dispersion of mold spores.
- Comply with Good Laboratory Practice.

QUALITY CONTROL OF MANUFACTURER

Every product manufactured and marketed by Bio-Rad is subject to a quality-assurance procedure at all stages, from the reception of raw materials to the marketing of the end-product. Each batch of finished product undergoes quality control and is marketed only if it satisfies the acceptability criteria.

Documentation relative to the production and control of each batch is kept on file.

PERFORMANCES / QUALITY CONTROL OF THE TEST

The growth performances of the media are verified with the following strains:

STRAINS	Result after 3-5 days at 25℃
Productivity	
Candida albicans ATCC 10231	PR ≥ 0.5
Aspergillus niger ATCC 16404	PR ≥ 0.5
Penicillium cyclopium ATCC 16025	PR ≥ 0.5
Saccharomyces cerevisiae ATCC 9763	PR ≥ 0.5
Selectivity	
Escherichia coli ATCC 25922	No growth
Bacillus subtilis ATCC 6633	No growth

*** PR = Total colony count obtained on 2 plates of YGC/total colony count on 2 plates of Sabouraud agar.**

KEY WORDS

YGC / Yeasts / Molds / Food products / Enumeration / Chloramphenicol / Medium.

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