



PURPLE GLUCOSE AGAR

Dehydrated and ready-to-use culture medium

1 - INTENDED USE

For the confirmation test of *Pseudomonas* spp.

2 – COMPOSITIONS

TYPICAL FORMULA (AFTER RECONSTITUTION WITH 1 L OF WATER) *

Enzymatic digest of casein	10.0 g
Yeast extract	1.5 g
Glucose	10.0 g
Sodium chloride	5.0 g
Agar	12.2 g
Bromocresol purple	15.0 mg

*The formula may be adjusted and/or supplemented to meet the required performances criteria.

3 - PRINCIPLE OF THE METHOD AND EXPLANATION OF THE PROCEDURE

Purple Glucose Agar is a medium recommended by ISO 11059¹ for the confirmation test of *Pseudomonas* spp. after isolation on a selective medium.

Enzymatic digest of casein and yeast extract provide nitrogen, vitamins, minerals and amino acids for microbial growth. Glucose is the fermentable carbohydrate and a source of carbon and energy. Sodium chloride maintains the osmotic balance. Bromocresol purple is a pH indicator. After incubation, the glucose-fermenting microorganisms exhibit a yellow colour throughout the content of the tube.

4 - DIRECTIONS FOR DEHYDRATED MEDIUM PREPARATION

Suspend 38.7 g in 1000 mL of cold purified water. Heat to boiling with frequent agitation, distribute in 10 mL amounts into test tubes and sterilise by autoclaving at 121°C for 15 minutes. Leave the tubes in a vertical position. The medium may be stored for up to one week at 2-8°C. In order to remove oxygen, just before the use, heat the medium in boiling water or flowing steam for 15 minutes, then cool rapidly to the incubation temperature.

5 - PHYSICAL CHARACTERISTICS

Dehydrated medium appearance	violet, fine, homogeneous, free-flowing powder
Solution and prepared tubes appearance	violet, clear
Final pH at 20-25 °C	7.0 ± 0.2

6 - MATERIALS PROVIDED - PACKAGING

Product	Type	REF	Pack
Purple Glucose Agar	Dehydrated medium	4019702	500 g (13 L)
Purple Glucose Agar	Ready-to-use tubes	551970	20 x 10 mL

7 - MATERIALS REQUIRED BUT NOT PROVIDED

Autoclave and water-bath, sterile needles, incubator and laboratory equipment as required, test tubes, Erlenmeyer flasks, ancillary culture media and reagents.

8 – SPECIMENS

The sample consists of bacterial cultures isolated from dairy products or other materials, purified on Nutrient Agar or other suitable medium.

9 - TEST PROCEDURE

Obtain pure isolated colonies by subculturing from isolation medium to Nutrient Agar plates.

Stab, by means of a needle, colonies from the nutrient agar medium into tubes containing Purple Glucose Agar.

Incubate at 25 °C ± 1 °C for 24 h ± 3 h without hermetically closing the tubes.

10 - READING AND INTERPRETATION

If a yellow colour develops in the entire contents of the tube, the reaction is considered positive: presence of glucose fermentation.

Consider the test to be negative (absence of glucose fermentation) when growth can be observed but no yellow colour develops throughout the content of the tube.

Consider colonies showing a positive oxidase reaction and absence of glucose fermentation as *Pseudomonas* colonies.

11 - USER QUALITY CONTROL

All manufactured lots of the product are released for sale after the Quality Control has been performed to check the compliance with the specifications. However, the end user can perform its own Quality Control in accordance with the local applicable regulations, in compliance with accreditation requirements and the experience of the Laboratory. Here below are listed some test strains useful for the quality control.

CONTROL STRAINS	INCUBATION T°/ T - ATM	EXPECTED RESULTS
<i>P. aeruginosa</i> ATCC 27053	25°C/ 24h/A	growth, no colour change to yellow
<i>E. coli</i> ATCC 25922	25°C/ 24h/A	growth, colour change to yellow

A: aerobic incubation; ATCC is a trademark of American Type Culture Collection

12 – PERFORMANCES CHARACTERISTICS

Prior to release for sale, representative samples of all lots of dehydrated and ready-to-use Purple Glucose Agar are tested for specific performance characteristics by comparing the results with a previously approved Reference Batch. The tubed medium is inoculated by stabbing with pure cultures of *P. aeruginosa* ATCC 27853, *P. fluorescens* ATCC 13525, *E. coli* ATCC 25922 and *S. Typhimurium* ATCC



14028. Tubes are incubated with loose caps at 25 °C for 24 hours in aerobic atmosphere. The colour changes of tubed media are observed and recorded: *Pseudomonas* spp grow without a colour change to yellow of the medium, while glucose fermenting *E. coli* and *S. Typhimurium* grow with colour change of the medium to yellow throughout the content of the tube.

13 – LIMITATIONS OF THE METHOD

- Some *Pseudomonas* strains may develop a yellow colour at the agar surface resulting from glucose oxidation.

14 - PRECAUTIONS AND WARNINGS

- This culture medium is for microbiological control and for professional use only; it is to be used by adequately trained and qualified laboratory personnel, observing approved biohazard precautions and aseptic techniques.
- Dehydrated media must be handled with suitable protection. Before use, consult the Material Safety Data Sheets.
- This culture medium contains raw materials of animal origin. The *ante* and *post mortem* controls of the animals and those during the production and distribution cycle of the raw materials, cannot completely guarantee that the product doesn't contain any transmissible pathogen. Therefore, it is recommended that the culture medium be treated as potentially infectious, and handled observing the usual specific precautions: do not ingest, inhale, or allow to come into contact with skin, eyes, mucous membranes. Download the TSE Statement from the website www.biolifeitaliana.it, describing the measures implemented by Biolife Italiana for the risk reduction linked to infectious animal diseases.
- Apply Good Manufacturing Practice in the production process of prepared media.
- Be careful when opening screw cap tubes to prevent injury due to breakage of glass.
- Ready-to-use tubes are subject to terminal sterilization by autoclaving.
- Each tube of this culture medium is for single use only.
- All laboratory specimens should be considered infectious.
- The laboratory area must be controlled to avoid contaminants such as medium powder or microbial agents.
- Sterilize all biohazard waste before disposal. Dispose the unused medium and the sterilized medium inoculated with samples or microbial strains in accordance with current local legislation.
- Do not use the culture medium as active ingredient for pharmaceutical preparations or as production material intended for human and animal consumption.
- The Certificates of Analysis and the Safety Data Sheets are available on the website www.biolifeitaliana.it.
- The information provided in this document has been defined to the best of our knowledge and ability and represents a guideline for the proper use of the product but without obligation or liability. In all cases existing local laws, regulations and standard procedures must be observed for the examination of samples collected from human and animal organic districts, for environmental samples and for products intended for human or animal consumption. Our information does not relieve our customers from their responsibility for checking the suitability of our product for the intended purpose.

15 - STORAGE CONDITIONS AND SHELF LIFE

Ready-to-use medium in tubes

Upon receipt, store tubes in their original pack at 2-8°C away from direct light. If properly stored, the tubes may be used up to the expiration date. Do not use the tubes beyond this date. Tubes from opened secondary packages can be used up to the expiration date. Opened tubes must be used immediately. Before use, check the closing and the integrity of the screw cap. Do not use tubes with signs of deterioration (e.g., microbial contamination, abnormal turbidity, precipitate, atypical colour).

Dehydrated medium














Upon receipt, store at +10°C /+30°C away from direct light in a dry place. If properly stored, it may be used up to the expiration date. Do not use beyond this date. Avoid opening the bottle in humid places. After use, the container must be tightly closed. Discard the product if the container and/or the cap are damaged, or if the container is not well closed, or in case of evident deterioration of the powder (colour changes, hardening, large lumps).

The user is responsible for the manufacturing and quality control processes of prepared media and the validation of their shelf life, according to the type and the applied storage conditions (temperature and packaging). According to ISO 21528:2004² withdrawn, the self-prepared tubes can be stored at +2°C +8°C for up to one weeks. In order to remove oxygen, just before the use, heat the medium in boiling water or flowing steam for 15 minutes, then cool rapidly to the incubation temperature.¹

16 – REFERENCES

- ISO/TS 11059: 2009. Milk and milk products -Method for the enumeration of *Pseudomonas* spp.
- ISO 21528-1: 2004 Microbiology of food and animal feeding stuffs -- Horizontal methods for the detection and enumeration of Enterobacteriaceae -- Part 1: Detection and enumeration by MPN technique with pre-enrichment

TABLE OF APPLICABLE SYMBOLS

 or  Catalogue number	 Batch code	 Manufacturer	 This side up	 Store in a dry place	 Fragile
 Temperature limitation	 Content sufficient for <n> tests	 Consult Instructions for Use	 Use by	 Keep away from direct light	 For single use only

REVISION HISTORY

Version	Description of changes	Date
Revision 2	Updated layout and content	2022/11

Note: minor typographical, grammatical, and formatting changes are not included in the revision history.