

TECHNICAL DATA SHEET

GLUCOSE AGAR

CONFIRMATION OF ENTEROBACTERIACEAE AND *PSEUDOMONAS*

1 INTENDED USE

Glucose agar allows the demonstration of glucose fermentation (with or without gas production) as an identification test for *Enterobacteriaceae* or *Pseudomonas* in the context of the following standards : NF ISO 21528-1 and NF ISO 21528-2 for the detection and enumeration of *Enterobacteriaceae*, or ISO/TS 11059 for the enumeration of *Pseudomonas* spp.

2 PRINCIPLES

The nutritive qualities of the medium are due to its content of casein peptone, yeast extract and glucose. Fermentation of glucose is demonstrated through acidification, which turns the pH indicator (bromocresol purple) yellow). Sodium chloride helps to maintain osmotic equilibrium.

3 TYPICAL COMPOSITION

The composition can be adjusted in order to obtain optimal performance.

For 1 liter of media :

- Tryptone 10,0 g
- Yeast extract 1,5 g
- Sodium chloride 5,0 g
- Glucose 10,0 g
- Bromocresol purple 15,0 mg
- Bacteriological agar..... 12,0 g

pH of the ready-to-use media at 25 °C : 7,0 ± 0,2.

4 PREPARATION

- Before use, it is recommended to re-melt the ready-to-melt agar tubes (BM009) in a boiling water bath for the minimum amount of time to insure total liquefaction, and to re-solidify in the correct position.
- Do not repeat this operation more than once.

5 INSTRUCTIONS FOR USE

- From a suspect colony taken from a selective isolation media and purified on Nutrient agar, inoculate the butt of the tube by stabbing in the center of the tube.
- Incubate at 37°C for 24 hours, caps slightly unscrewed, in order to favor gas exchange.

✓ **Inoculation :**
Central stab

✓ **Incubation :**
24 h at 37 °C

Note :

It is required to use pure cultures taken from isolated, distinct colonies in order to avoid cross reactions that render identification impossible.

6 RESULTS

The medium allows a differentiation and demonstration of glucose fermentation :

- Violet butt : negative glucose fermentation.
- Yellow butt : positive glucose fermentation.

Typical reactions are presented in the following table :

Species	Glucose fermentation
<i>Salmonella</i>	+
<i>Shigella dysenteriae</i>	+
<i>Shigella flexneri</i>	+
<i>Shigella sonnei</i>	+
<i>Shigella boydii</i>	+
<i>Proteus vulgaris</i>	+
<i>Proteus mirabilis</i>	+
<i>Proteus morgani</i>	+
<i>Proteus rettgeri</i>	+
<i>Serratia marcescens</i>	+

Species	Glucose fermentation
<i>Enterobacter hafniae</i>	+
<i>Enterobacter aerogenes</i>	+
<i>Enterobacter cloacae</i>	+
<i>Escherichia coli</i>	+
<i>Citrobacter freundii</i>	+
<i>Klebsiella pneumoniae</i>	+
<i>Bacillus cereus</i>	+
<i>Alcaligenes faecalis</i>	-
<i>Pseudomonas aeruginosa</i> ⁽¹⁾	-
<i>Yersinia enterocolitica</i>	-

⁽¹⁾ a few strains of *Pseudomonas* may develop a yellow coloration, due to oxidation of glucose, on the surface of the agar.

7 QUALITY CONTROL

Aspect, color : purple agar.

Typical culture response after 24 hours of incubation at 37 °C :

Microorganisms		Growth	Glucose fermentation
<i>Escherichia coli</i>	WDCM 00013	Good, score 2	Positive
<i>Salmonella Typhimurium</i>	WDCM 00031	Good, score 2	Positive
<i>Bacillus cereus</i>	WDCM 00001	Good, score 2	Positive
<i>Bacillus cereus</i>	ATCC® 14579	Good, score 2	Positive
<i>Pseudomonas aeruginosa</i>	WDCM 00025	Good, score 2	Negative
<i>Pseudomonas aeruginosa</i>	WDCM 00026	Good, score 2	Negative

8 STORAGE / SHELF LIFE

Ready-to-melt media in tubes : 2-25 °C.

The expiration date is indicated on the label.

9 PACKAGING

Ready-to-melt media :

50 x 10 mL tubes BM09908

10 BIBLIOGRAPHY

NF ISO 21528-1. Décembre 2004. Microbiologie des aliments. Méthodes horizontales pour la recherche et le dénombrement des *Enterobacteriaceae*. Partie 1 : Recherche et dénombrement à l'aide de la technique NPP avec préenrichissement.

NF ISO 21528-2. Décembre 2004. Microbiologie des aliments. Méthodes horizontales pour la recherche et le dénombrement des *Enterobacteriaceae*. Partie 2 : Méthode par comptage des colonies.

ISO/TS 11059. Août 2009. Lait et produits laitiers. Méthode de dénombrement des *Pseudomonas* spp..

11 ADDITIONAL INFORMATION

The information provided on the labels take precedence over the formulations or instructions described in this document and are susceptible to modification at any time, without warning.

Document code : GLUCOSE AGAR_ENV5
Creation date : 12-2004
Updated : 05-2016
Origin of revision : General update.