Drigalski/Agar

356-3834
355-4117
356-4664

DEFINITION
Medium used in the testing of food products for the detection and enumeration of *Enterobacteria* and coliforms by means of surface inoculation.

PRINCIPLE
Crystal violet and sodium desoxycholate inhibit the growth of most Gram-positive bacteria. The presence of lactose and of bromothymol blue allows differentiation of lactose-positive and lactose-negative bacteria.

PRESENTATION
- **Pre-poured**
  90 mm x 20 dishes **code 356-3834**
- **Ready-to-use**
  200 ml x 6 bottles **code 355-4117**
- **Dehydrated**
  500 g **code 356-4664**

STORAGE
- Pre-poured: + 2℃ to 20 ℃
- 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

Bacteriological peptone	15 g
Meat extract	3 g
Yeast extract	3 g
Sodium desoxycholate	1 g
Sodium thiosulfate	1 g
Lactose	15 g
Crystal violet	5 mg
Bromothymol blue	80 mg
Agar	11 g
Distilled water	1,000 ml

Final pH (25℃) = 7.4 ± 0.2

OTHER PRODUCTS REQUIRED (NOT SUPPLIED)
- Distilled water.

EQUIPMENT REQUIRED (NOT SUPPLIED)
(non-exhaustive)
- Scales
- Sterile weighing bags
- Hotplate
- Mixer-homogenizer
- 225 ml Pyrex bottles with autoclave-proof stoppers
- Sterile Petri dishes (Ø = 90 mm)
- Sterile pipettes (0,1 ml, etc)
- Sterile spreaders
- Sterile Pasteur pipettes (**code 355-0751**) or inoculating loops
- Water-bath precise to ± 1℃
- Incubator precise to ± 1℃
- All usual laboratory equipment.

PREPARATION OF DEHYDRATED MEDIUM
Always shake well before use
Dissolve 49 g of powder in 1 liter of distilled water, then mix until a homogenous suspension is obtained. Heat gently, swirling frequently, then bring to boiling point until completely dissolved.
Dispense 200 ml per bottle and sterilize in autoclave at 115℃ (± 1℃) for 15 minutes.

Reconstitution ratio: 49 g/l
500 g of powder makes 10.2 liters of medium.

PROTOCOL
• Preparation of samples
According to the standards applicable to the product concerned.

• Inoculation and incubation
At the moment of use, melt the medium in a boiling water-bath, cool to 44℃ - 47℃ and pour onto Petri dishes or-for detection of fermentation/non-fermentation of lactose by a pure culture-dispense in sterile inclined tubes.
After surface inoculation, incubate at 37℃ ± 1℃ for 18 - 24 hours.

N.B.: Drigalski medium only partially inhibits invasion by Proteus *(*P. mirabilis *and* P. vulgaris*).*
In cases where their presence is suspected, deposit 1 or 2 drops of alcohol in the lid after inoculation and just prior to incubation. The alcohol vapors prevent invasion by Proteus *strains without inhibiting the culture of the* Enterobacteria.

READING AND INTERPRETATION
As the pH indicator is Bromothymol blue:
- Lactose-positive bacteria: yellow colonies

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(*E. coli, Klebsiella, Enterobacter*)
- Lactose-negative bacteria: blue-green or royal blue colonies (*Salmonella, Shigella, Proteus, Providencia, Hafnia, Serratia, Edwardiella, Alcaligenes faecalis, Pseudomonas*)

Lactose-negative *Yersinia* give round colonies with a diameter < 1 mm after 24 hours incubation at 37°C and sub-culture is not possible until after a further 24 hours incubation, if possible at 30°C rather than 37°C.

PRECAUTIONS

- 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 in contact with the culture medium must not exceed 15 minutes.
- Comply with Good Laboratory Practice.

PERFORMANCES / QUALITY CONTROL OF THE TEST

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

STRAINS	Results after 24h culture at 37°C
Escherichia coli ATCC 25922	lactose (+) colonies
Salmonella Enteritidis ATCC 13076	lactose (-) colonies
Shigella sonnei ATCC 25931	lactose (-) colonies
Proteus vulgaris ATCC 13315	lactose (-) colonies
Proteus mirabilis ATCC 25933	lactose (-) colonies
Enterococcus faecalis ATCC 19433	Inhibition
Bacillus cereus ATCC 9634	Inhibition

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.

KEY WORDS

Drigalski / *Enterobacteria* / Coliforms / Food products / Detection / Enumeration / Lactose / Bromothymol blue / Crystal violet / Surface / Medium.

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