

Tryptone Bile Agar

Tryptone Bile Agar is used for fast detection and enumeration of *Escherichia coli* in food using a modified direct plating method.

REF: BS.1/NZ01.100.0100	100 Gram	REF: BS.1/NZ01.250.0250	250 Gram
REF: BS.1/NZ01.500.0500	500 Gram		

PRINCIPLE AND INTERPERTATION :

Tryptone Bile Agar was formulated by Anderson and Baird-Parker (1). The International Commission on the Microbiological Specifications for Foods (CMSF) (6) compared the Most Probable Number (MPN) and the Anderson-Baird-Parker Direct Plating Method (DPM) and observed that DPM was superior to MPN for enumeration of *Escherichia coli* from raw meats. Superiority of DPM method was noticed by the organization on the basis of less variability, better recovery from frozen samples, greater rapidity and the smaller quantity of medium required. The DPM enumerates both anaerogenic and late lactose fermenting strains of *E. coli* which could be missed by the MPN method (about 10%)(3). This formulation is recommended by ISO committee for the enumeration of *E. coli* (7). Holbrook et al (5) modified the DPM for detection and enumeration of sublethally damaged cells of *E. coli* in frozen, dried, heat processed or acid foods and found that resuscitation step reduces the high concentration of sugar present in the inoculum to a level which does not interfere with the production of indole as the synthesis of tryptophanase is inhibited by high sugar concentrations (2). Certain organisms breakdown the amino acid tryptophan with the help of enzymes that mediate the production of indole by hydrolytic activity (10). The indole produced can be detected by either Kovacs or Ehrlichs reagent (4). Indole combines with the aldehyde present in the above reagent to give red colour in the alcohol layer. The alcohol layer extracts and concentrates the red colour complex. The indole positive organisms other than *E. coli* are inhibited by bile salts and elevated incubation temperature.

MEDIA COMPOSITION

Final pH (at 25°C) 7.2 ± 0.2 ** Formula adjusted, standardized to suit

Item	Formula per liter of medium
tryptone	20.00 gm
Bile salts mixture	1.500 gm
Agar	15.00 gm

performance parameters.

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environmental contamination.

S61: avoid release in environment.

For further information, refer to the Tryptone Bile Agar material safety data sheet.

STORAGE AND STABILITY

BioScien Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Product performance is best if used within stated expiry period

PREPARATION

Suspend 36.5 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Deterioration

The color of **BioScien** Yellow coloured clear to slightly opalescent gel forms in Petri plates.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile petri dishes
- Incubator
- Autoclave

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed after an incubation at 44°C for 24 hours.

Organisms (ATCC)	Growth
Klebsiella aerogenes ATCC 13048	inhibited
Escherichia coli ATCC 25922	good-luxuriant

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control still out of range please contact **BioScien** technical support.

REFERENCE

1. Anderson J. M. and Baird-Parker A. C., 1975, J. Appl. Bacteriol., 39:111.
2. Clarke P. H. and Cowen S. T., 1952, J. Gen. Microbiol., 6:187.
3. Ewing W. H., 1972, US Dept. of Health, Education and Welfare, CRC, Atlanta.
4. Finegold S. M., Baron E. J., 1986, Bailey and Scotts Diagnostic Microbiology, 7th Ed., The C.V. Mosby Co., St. Louis.
5. Holbrook R., Anderson J. M. and Baird - Parker A.C., 1980, Food Technol. in Aust., 32:78.
6. International Commission on Microbiological Specifications for Food, 1979, Can. J. Microbiol., 25:1321.
7. International Organization for Standardization (ISO), 1988, Draft ISO/DIS 6391.
8. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
9. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
10. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
11. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

SYMBOLS IN PRODUCT LABELLING	
 For in-vitro diagnostic use	 Number of <n> test in the pack
 Batch Code/Lot number	 Caution
 Catalogue Number	 Do not use if package is damaged
 Temperature Limitation	 Consult Instruction for use
 Expiration Date	
 Manufactured by	