Tryptone Dextrose Agar

M320

Tryptone Dextrose Agar is used for studying motility and fermentation of dextrose by aerobes as well as anaerobes.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Dextrose	5.000
Bromo thymol blue	0.010
Agar	3.500
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 28.51 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense in tubes and sterilize by autoclaving at 118°C for 15 minutes. Cool the tubed medium in an upright position.

Principle And Interpretation

Tryptone Agar was developed by Vera (1) for the accurate differentiation and identification of aerobes and anaerobes by means of motility and fermentation reactions. It is recommended for Clostridia, *Bacillus* species, Micrococci, enteric bacilli and other nonfastidious organisms (2).

Casein enzymic hydrolysate provides essential nutrients necessary to support the growth of nonfastidious microorganisms. Bromothymol blue is the pH indicator. Small amount of agar renders it suitable for study of motility. Acid produced do not readily get dispersed throughout the medium and hence positive reaction can be more quickly determined in this medium than in liquid medium. This is also an excellent medium for the maintenance for both - aerobic and anaerobic cultures. Viability in this medium is greater than in any other broth medium or slant culture. Organisms capable of utilizing dextrose, ferment dextrose and produce acidic conditions in the medium. This acidity is detected by the pH indicator bromothymol blue which changes from blue to yellow under acidic conditions.

Quality Control

Appearance
Cream to light green homogeneous free flowing powder

Gelling
Semisolid, comparable with 0.35% Agar gel.

Colour and Clarity of prepared medium
Bluish green coloured clear to slightly opalescent gel forms in tubes as butts.

Reaction
Reaction of 2.85% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH
7.10-7.50

Cultural Response
M320: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Acid	Motility
Clostridium perfringensATCC 12924	50-100	luxuriant	positive reaction, yellow colour	negative, growth along the stabline, surrounding

				medium remains clear
Clostridium sporogenes ATCC 11437	50-100	luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
Escherichia coli ATCC 25922	50-100	luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
Enterobacter aerogenes ATCC 13048	50-100	luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
Salmonella Typhi ATCC 6539	50-100	luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
Salmonella Enteritidis ATCC 13076	50-100	luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
Staphylococcus aureus ATCC 25923	50-100	good	positive reaction, yellow colour	negative, growth along the stabline, surrounding medium remains clear

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1. Vera, 1944, J. Bact., 47:455.
2. MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.

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