CTA Medium

Cat. 1502

For the maintenance of strains and in motility and carbohydrate fermentation studies.

Practical information

Aplications	Categories
Growth	Fastidious microorganisms

Industry: Clinical

CE IVD

Principles and uses

CTA Medium (Cystine Tryptic Agar) is a nutrient base, semisolid medium which contains peptones rich in tryptophane and vitamins. It is used for the determination of motility of fastidious microorganisms, for fermentation tests with the addition of carbohydrates and for the classification of yeasts, being able to determine fermentation reactions of fastidious microorganisms, e.g. pathogenic Neisseria.

Casein peptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group essential for bacterial growth. Sodium chloride supplies essential electrolytes for transport and osmotic balance. L-Cystine and sodium sulfite are the reducing agents. Phenol red is the pH indicator. Bacteriological agar is the solidifying agent.

The semisolid consistency of the medium is suitable for detecting the motility of some microbes. With the addition of a 1% concentration of a specific carbohydrate, it is recommended for the differentiation of fastidious microorganisms by means of fermentation reactions. Without the addition of carbohydrates, it is recommended as a holding medium for fastidious microorganisms at 25 ºC.

The fastidious organisms such as Neisseria, Pasteurella, pneumococci, streptococci, Brucella, Corynebacteria, and Vibrio grow well in CTA Medium without adding carbon dioxide, serum, or any other enrichment substances.

The stabbed cultures of motile organisms grow out from the line of inoculation. The non-motile microorganisms remain only within the inoculated area, while the surrounding agar remains clear.

For fermentation tests with members of Neisseria, inoculate the surface of the tubes only. Neisseria species usually produce acid in the area of stabs (upper third) only. If there is a strong acid (yellow color) throughout the medium, a contaminating organism may be present. If in doubt about a tube containing a Neisseria species, a Gram stain and oxidase test should be performed on the growth.

The facultative microorganisms such as streptococci and strictly anaerobic microorganisms can be inoculated by stabbing at half the depth of the tube. The acid reactions can be easily observed as the produced acid does not spread immediately throughout the entire tube. The majority of cultures display an alkaline reaction when there is no fermentable carbohydrate present.

Formula in g/L

Bacteriological agar	2,5	Casein peptone	20
L-Cystine	0,5	Phenol red	0,017
Sodium chloride	5	Sodium sulfite	0,5
Yeast extract	0,2		

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 28,7 grams of the medium in one liter of distilled water. If desired, add 0,5 to 1,0 % carbohydrate for a specific fermentation test. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 118 ºC for 15 minutes. Cool to 50 ºC, mix well and dispense into tubes. Allow to cool in a slanted position.

Instructions for use

For clinical diagnosis, the type of sample is bacteria isolated from clinical samples.

- Inoculate the tube vertically.
- Incubate in aerobic conditions at 35±2 ºC for 18-24 h.
- Reading and interpretation of the results.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Beige-pink	Pink	7,3±0,2

Microbiological test

Incubation conditions: (35±2 ºC / 18-24 h).

Microorganisms	Specification	Characteristic reaction
Neisseria meningitidis ATCC 13090	Good growth	Motile
Escherichia coli ATCC 25922	Good growth	Motile
Staphylococcus aureus ATCC 25923	Good growth	Not motile

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

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