Acetate Differential Agar

Cat. 1192

For the differentiation of Shigella from E. coli and non fermentative Gram negative bacilli

Practical information

Aplications	Categories
Differentiation	Non fermentative gram negative bacteria
Differentiation	Shigella
Differentiation	Escherichia coli

CE
IVD

Principles and uses

Acetate Differential Agar is used to test the ability of an organism to use acetate as the sole source of carbon.

Most bacteria can use citrate and acetate with organic nitrogen present. Simmons Citrate Agar was elaborated by Simmons to measure citrate use without the presence of organic nitrogen. Trabulsi and Ewing replaced sodium citrate with sodium acetate in their formulation of Acetate Differential Agar.

The medium contains a mixture of salts and Sodium acetate, as a sole source of carbon, which results in the production of alkaline products. The increment in pH creates a blue color in the medium due to the presence of Bromothymol blue. Dipotassium phosphates act as a buffer system.Bacteriological agar is the solidifying agent.

Typical cultures of Shigella are unable to use acetate and fail to grow; therefore, the medium

remains unchanged. The majority of Escherichia coli grow well within 24-48 hours, but some strains grow more slowly and may give a false-negative reaction if results are observed at 24-48 hours only. The growth is indicative of the use of Acetate.

Formula in g/L

Bromthymol blue	0,08	Bacteriological agar	20
Magnesium sulfate	0,1	Monoammonium phosphate	1
Sodium acetate	2	Sodium chloride	5
Potassium hydrogen phosphate	1		

Preparation

Suspend 29 grams of medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 ºC for 15 minutes Cool to 50 ºC, mix well and dispense into appropriate containers.

Instructions for use

For clinical diagnosis, the type of sample is bacteria isolated from any clinical sample.
- Inoculate on the surface making parallel striae with the handle or swab. Inoculation can also be done from a pre-enrichment culture.
- Incubate at 35±2 ºC for 18-24 hours. Leave up to 7 days and observe periodically.
- 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 with a green tint	Green	6,7±0,2

Microbiological test

Incubation conditions: (35ºC±2 ºC / 1-7 days)

Microrganisms	Specification	Characteristic reaction
Escherichia coli ATCC 25922	Good growth	Blue color in the medium
Shigella sonnei ATCC 25931	Inhibition	

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Simmons, J.S.1926 J.Infect. Dis.39209

Trabulsi, L.R. and W.H. Ewing 1962 Public Health Lab.20.137

Edwards, P.R. and W.H. Ewing 1972. Identification of Enterobacteriaceae