ACETATE DIFFERENTIAL AGAR

CAT Nº: 1192

Medium used for the differentiation of *Shigella* from *E. coli* and non fermentative gram-negative bacilli

FORMULA IN g/l

Sodium Chloride	5.00	Magnesium Sulfate	0.10
Sodium Acetate	2.00	Bromothymol Blue	0.08
Dipotassium Phosphate	1.00	Bacteriological Agar	20.00
Monoammonium Phosphate	1.00		

Final pH 6.7 ± 0.2 at 25ºC

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°C for 15 minutes Cool to 50ºC, mix well and dispense into appropriate containers. The prepared medium should be stored at 8-15ºC. The color of the prepared medium is green.

The dehydrated medium should be homogeneous, free-flowing and beige with a green tint in color. If there are any physical changes, discard the medium.

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.

Incubate at 35ºC ± 2ºC and observe periodically for 7 days.

MICROBIOLOGICAL TEST

The following results were obtained in the performance of the medium from type cultures after incubation at a temperature of 35ºC ± 2ºC and observed periodically for 7 days

Microorganisms	Growth
Shigella sonnei ATCC 25931	Inhibited
Escherichia coli ATCC 25922	Good

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

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STORAGE

Once opened keep powdered medium closed to avoid hydration.