Ewing Malonate Broth Modified

Cat. 1212

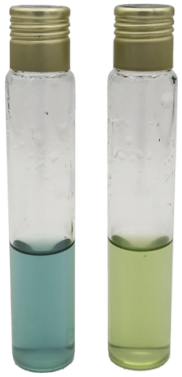
For the differentiation of coliforms and other enteric organisms.

Practical information

Aplications	Categories
Differentiation	Enterobacteria

Industry: Clinical / Food / Dairy products

CE
IVD



Principles and uses

Ewing Malonate Broth Modified is prepared following Leifson's formula and modified with the addition of yeast extract and dextrose, for the differentiation of coliforms and other enteric organisms. It is widely used for the differentiation of Enterobacter and Escherichia coli based on the use of malonate.

Examples of microorganisms with positive malonate activity are Enterobacter, Klebsiella and strains of Arizona. Some examples of those not able to use malonate are Escherichia, Salmonella and Serratia, amongst others.

Malonate utilization as a carbon source, in conjunction with ammonium sulphate as a nitrogen source during growth, produces sodium hydroxide and thereby increased alkalinity, which changes the color of the medium from green to blue due to the pH indicator bromothymol blue. Yeast extract is a source of vitamins, particularly of the B-group essential for bacterial growth. Dextrose is the fermentable carbohydrate providing carbon and energy. Potassium phosphates act as a buffer system. Sodium chloride supplies essential electrolytes for transport and osmotic balance.

The organisms that do not utilize malonate do not produce a color change and the medium remains the original green color. Some malonate-negative strains produce a yellow color due to the fermentation of dextrose, which increases acidity, and the medium turns yellow at a pH of 6,0.

Formula in g/L

Bromthymol blue	0,025	Ammonium sulfate	2
Dextrose	0,25	Dipotassium phosphate	0,6
Monopotassium phosphate	0,4	Sodium chloride	2
Yeast extract	1	Sodium Malonate	3

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

Preparation

Suspend 9,3 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121 ºC for 15 minutes.

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.
- Incubate in aerobic conditions at 35±2 ºC for 18-48 hours.
- 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	Green	6,7±0,2

Microbiological test

Incubation conditions: (35±2 ºC / 18-48 h).

Microorganisms	Specification	Characteristic reaction
Klebsiella aerogenes ATCC 13048	Good growth	Blue medium
Salmonella arizonae ATCC 13314	Good growth	Blue medium
Klebsiella pneumoniae ATCC 13833	Good growth	Blue medium
Salmonella typhimurium ATCC 14028	Good growth	Green medium
Escherichia coli ATCC 25922	Good growth	Green medium

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Leifson, E. J. 26:329, 1993 Ewing. W. H. Identification of Enterobacteriaceae, Burgess Publishing Co., Minneapolis, Minn., 1972.