Acetamide Agar

Cat. 1391

For the differentiation of non fermentative Gram negative bacteria, in particular Pseudomonas aeruginosa.

Practical information

Aplications	Categories
Differentiation	Non fermentative gram negative bacteria
Differentiation	Pseudomonas aeruginosa

Industry: Water / Cosmetics

Principles and uses

Acetamide Agar is used to determine the ability of non-fermenting Gram negative bacteria to deaminate the acetamide. The deamination of the acetamide produces ammonia which increases the pH of the medium. The resulting alkalinization is shown by a color change of the phenol red from yellow-orange to purple-red.

Pseudomonas aeruginosa is an opportunist pathogen for humans, capable of growing in water with a low concentration of nutrients. This is why natural mineral water and spring water are Pseudomonas aeruginosa free at the time of their commercialization. This microorganism can also be found in swimming pool water.

Acetamide deamination is accomplished by Pseudomonas.aeruginosa, Pseudomonas acidovorans, Group III (Achromobacter xylosoxidans), and Alcaligenes odorans.

Acetamide is a carbon source. Dextrose is a fermentable carbohydrate providing carbon and energy, the potassium salts have a high buffering capacity. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Phenol red is a pH indicator and bacteriological agar is the solidifying agent.

Formula in g/L

Acetamide	3	Bacteriological agar	15
Dextrose	0,2	Phenol red	0,03
Potassium dihydrogenphosphate	1	Sodium chloride	5
Yeast extract	0,5		

Preparation

Suspend 24,7 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 tubes and sterilize in autoclave at 121 ºC for 15 minutes. Allow to cool in a slanted position in order to obtain butts of 1,5 - 2,0 cm. depth.

Instructions for use

- Inoculate and incubate at a temperature of 35 ± 2ºC for 24-48 hours
- A positive reaction turns the medium an intense purple-red.
- P. aeruginosa is confirmed by positive asparagine and acetamide tests.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Pink-orange	Yellow-orange.	6,3 ± 0,2

Microbiological test

Incubation conditions: (35±2 ºC/ 24-48 h)

Microrganisms	Specification	Characteristic reaction
Pseudomonas aeruginosa ATCC 25668	Good growth	Color change of the medium to purple-red
Escherichia coli ATCC 25922	Good growth	No color change of the medium to purple-red
Proteus mirabilis ATCC 29906	Good growth	No color change of the medium to purple-red
Pseudomonas aeruginosa ATCC 9027	Good growth	Color change of the medium to purple-red

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Gilardi. 1974. Antonie van Leewenhoek. J. Microbiol. Serol. 39:229.
Buhlmann, Vischer and Bruhin. 1961. J. Bacteriol. 82:787.
Clesceri, Greenberg and Eaton (ed.) 1998. Standard methods for the examination of water and wastewater, 20th ed. American Public Health Association, Washington, D.C.
Murray, Baron, Pfaller, Tenover and Yolken (ed.). 1999. Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C