

Acetamide Agar

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

Practical information

Applications	Categories
Differentiation	Non fermentative gram negative bacteria
Differentiation	<i>Pseudomonas aeruginosa</i>

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 alkalization 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 °C 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 $35 \pm 2^\circ\text{C}$ 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	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Pink-orange	Yellow-orange.	6,3 ± 0,2

Microbiological test

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

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

Storage

Temp. Min.:2 °C
Temp. Max.:25 °C

Bibliography

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