Cetrimide Agar Base EP/USP/ISO

Cat. 1102

For the selective isolation and identification of Pseudomonas aeruginosa.

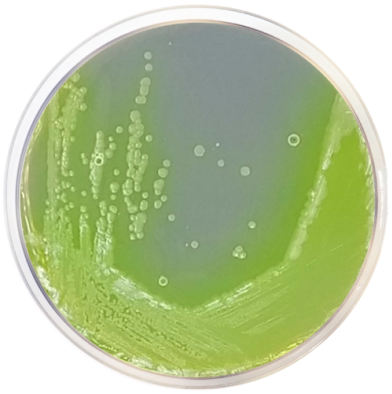
Practical information

Aplications	Categories
Selective isolation	Pseudomonas aeruginosa

Industry: Pharmaceutical/Veterinary / Cosmetics / Clinical / Final product Quality Control

Regulations: USP / European Pharmacopoeia / ISO 22717 / BAM

CE IVD



Principles and uses

Cetrimide Agar Base is recommended by the European Pharmacopoeia for the selective isolation and identification of Pseudomonas aeruginosa. This medium promotes the production of fluorescein (pyoverdin), a green-yellow fluorescent pigment that oxidizes to yellow. Fluorescein is not soluble in chloroform, unlike pyocyanin (blue-green pigment). The pigment diffuses throughout the medium and the fluorescent yellow-green color is observed.

Strains of Pseudomonas aeruginosa are identified from specimens because, in addition to their colonial morphology and the characteristic grape-like odor of aminoacetophenone, they produce pyocyanin, a blue, water-soluble, nonfluorescent, phenazine pigment. P. aeruginosa is the only specie of Pseudomonas or Gram-negative rod known to excrete pyocyanin.

Gelatin pancreatic digest provides nitrogen, vitamins, minerals and amino acids essential for growth. Glycerol is the carbon source. Magnesium chloride and Potassium Sulfate enhance the production of pyocyanin and pyoverdin. Cetrimide is the selective agent as it inhibits the growth of the accompanying microbial flora.

The European Pharmacopoeia, USP recommends this media in the paragraph 2.6.13: "Microbiological examination of non-sterile products: Test for specified microorganisms" for the test of Pseudomonas aeruginosa in products.

Formula in g/L

Bacteriological agar	13,6	Cetrimide	0,3
Gelatin pancreatic digest	20	Magnesium chloride anhydrous	1,4
Potassium sulfate	10		

Preparation

Suspend 45,3 grams of the medium in one liter of distilled water. Add 10 ml of glycerol. 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 °C for 15 minutes.

Instructions for use

» For clinical diagnosis, the sample type is any clinical sample, and specifically, flora samples with possible contamination.

- Inoculate on the surface. Parallel striae with the handle or hyssop.
- Incubate in aerobic conditions at 35±2 °C for 18-24 hours.
- Reading and interpretation of the results.

» For other uses not covered by the CE marking:

Test of specified microorganisms (Pseudomonas aeruginosa) according to European Pharmacopoeia:

- Inoculate a suitable amount of Trypticasein Soy Broth (Cat. 1224) and incubate at 30-35 ºC for 18-24 hours.
- Subculture on a plate of Cetrimide Agar and incubate at 30-35 ºC for 18-72 hours.
- Growth of colonies indicates the possible presence of p. aeruginosa. This is confirmed by identification tests.

- The identification of P. aeruginosa could be completed by performing the oxidase test. Add a few drops of a freshly prepared N,N-dimethyl-p phenylenediamine monohydrochloride solution to the growth on the nutrient agar slant.
- Oxidase positive cultures develop a pink colour which successively becomes maroon, dark red, and black in 10 to 30 minutes.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
Opalescent with precipitate	Fine powder	Beige	White-opaque	7,2±0,2

Microbiological test

According to Pharcopoeia; Pseudomonas aeruginosa ATCC 9027 and Escherichia coli ATCC 8739.
Incubation conditions: (30-35 ºC / 18-72 h).
Inoculation conditions: Productivity (<=100 CFU) / Inhibitory (>=100 CFU).

Rest of strains:
Incubation conditions: (30-35 ºC / 18-72 h).
Inoculation conditions: (>=100 CFU).

Microorganisms	Specification	Characteristic reaction
Escherichia coli ATCC 25922	Inhibition	
Staphylococcus aureus ATCC 25923	Inhibition	
Pseudomonas aeruginosa ATCC 27853	Good growth	Yellow-green colonies
Staphylococcus aureus ATCC 6538	Inhibition	
Escherichia coli ATCC 8739	Inhibition	
Pseudomonas aeruginosa ATCC 9027	Good growth	Yellow-green colonies

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

King, Ward and Raney. J. Lab. and Clin. Med. 44:301. 1954. Brown and Lowbury. J. Clin. Path. 18:752. 1965. Lowbury. J. Clin. Path. 4:66. 1951. Lowbury and Collins. J. Clin. Path. 8:47. 1955.
European Pharmacopoeia 9.3