CETRIMIDE AGAR

INTENDED USE

Cetrimide Agar is used for the selective isolation and identification of *Pseudomonas aeruginosa*.

SUMMARY AND EXPLANATION

King et al. developed Medium A (Tech Agar) for the enhancement of pyocyanin production by *Pseudomonas*.[1] Cetrimide (**Pseudosel**) Agar has the formula for Tech Agar but is modified by the addition of cetrimide (cetyl trimethyl ammonium bromide) for the selective inhibition of organisms other than *P. aeruginosa*.[2]

In 1951, Lowbury described the use of 0.1% cetrimide in a selective medium for *P. aeruginosa*.[2] Because of the increased purity of the inhibitory agent, the concentration was later reduced, as reported by Lowbury and Collins in 1955.[3] Brown and Lowbury employed incubation at 37°C with examination after 18 and 42 hours of incubation.[4]

Strains of *P. aeruginosa* are identified from specimens by their production of pyocyanin, a blue, water-soluble, nonfluorescent, phenazine pigment in addition to their colonial morphology[5] and the characteristic grapelike odor of aminoacetophenone.[6] *P. aeruginosa* is the only species of *Pseudomonas* or gram-negative rod known to excrete pyocyanin. Cetrimide (**Pseudosel**) Agar, therefore, is a valuable culture medium in the identification of this organism.

Cetrimide (**Pseudosel**) Agar is widely recommended for use in the examination of cosmetics,[7] clinical specimens[5-8] for the presence of *P. aeruginosa*, as well as for evaluating the efficacy of disinfectants against this organism.[9] It is also used in the microbiological examination of nonsterile pharmaceutical products for *Pseudomonas aeruginosa*.

PRINCIPLE

Gelatin peptone supplies the nutrients necessary to support growth. The production of pyocyanin is stimulated by the magnesium chloride and potassium sulfate in the medium.[10] Cetrimide is a quaternary ammonium, cationic detergent compound, which is inhibitory to a wide variety of bacterial species including *Pseudomonas* species other than *P. aeruginosa*. Agar is a solidifying agent. Cetrimide Agar Base is supplemented with 1% glycerol as a source of carbon.

REAGENTS (FORMULA)

Pancreatic Digest of Gelatin	20.0	g
Magnesium Chloride	1.4	g
Potassium Sulfate	10.0	g
Cetrimide	0.3	g
Agar	13.6	g
Deionized Water	1000.0	ml

PROCEDURE

Use standard procedures to obtain isolated colonies from specimens. Incubate plates in an inverted position (agar side up) at 35 ± 2°C for 18-48 hours.

Inoculate tubes with either pure cultures or with specimen material. Incubate tubes at 35 ± 2°C for 18-24 hours in an aerobic atmosphere.

EXPECTED RESULTS

Colonies that are surrounded by a blue-green pigment and fluoresce under short wavelength (254 nm) ultraviolet light may be presumptively identified as *Pseudomonas aeruginosa*. Note, however, that certain strains of *P. aeruginosa* may not produce pyocyanin. Other species of *Pseudomonas* do not produce pyocyanin, but fluoresce under UV light. Most non-*Pseudomonas* species are inhibited, and some species of *Pseudomonas* may also be inhibited. Gram staining, biochemical tests and serological procedures should be performed to confirm findings.

QUALITY CONTROL

All lot numbers have been tested and have been found to be acceptable. Customers can test products using the following quality control organisms. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

Organisms	Incubation	Results
Escherichia coli ATCC 8739	30-35°C for 18-72 hours	No Growth
Pseudomonas aeruginosa ATCC 27853	35 ± 2°C for 18-48 hours	Yellow-Green to Blue Colony
Pseudomonas aeruginosa ATCC 9027	30-35°C for 18-72 hours	Growth, No Color Colony

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