BD™ Pseudosel™ Agar (Cetrimide Agar)

INTENDED USE

BD Pseudosel Agar (Cetrimide Agar) is used for the selective isolation of *Pseudomonas aeruginosa* from clinical specimens and other materials.

PRINCIPLES AND EXPLANATION OF THE PROCEDURE

Microbiological method.
Pseudomonas aeruginosa is an environmental organism and an important nosocomial pathogen.[1] **BD Pseudosel Agar** is based on the formula of Tech Agar, divised by King et al. for the enhanced pyocyanin production of *Pseudomonas aeruginosa*, but is modified by the addition of cetrimide for the selective inhibition of organisms other than *P. aeruginosa*.[2,3] The medium is used for the isolation of *P. aeruginosa* both in clinical and pharmaceutical areas, and is mentioned in the US Pharmacopeia and in the European Pharmacopeia for use in microbial limit tests. [1,3-5]
In **BD Pseudosel Agar**, the peptone serves as a source of nitrogen, and glycerol is used as a carbon and energy source. The production of pyocyanin is stimulated by the magnesium chloride and potassium sulfate in the medium. Cetrimide (cetyl trimethyl ammonium bromide) is a quaternary ammonium compound that inhibits a wide variety of other organisms, including certain other *Pseudomonas* species and related organisms.

REAGENTS

BD Pseudosel Agar
Formula* Per Liter Purified Water

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

pH 7.2 +/- 0.2
*Adjusted and/or supplemented as required to meet performance criteria.

PRECAUTIONS

IVD . For professional use only.
Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.
Consult **GENERAL INSTRUCTIONS FOR USE** document for aseptic handling procedures, biohazards, and disposal of used product.

STORAGE AND SHELF LIFE

On receipt, store plates in the dark at 2 to 8° C, in their original sleeve wrapping until just prior to use. Avoid freezing and overheating. The plates may be inoculated up to the expiration date (see package label) and incubated for the recommended incubation times.
Plates from opened stacks of 10 plates can be used for one week when stored in a clean area at 2 to 8° C.

USER QUALITY CONTROL

Inoculate representative samples with the following strains (for details, see **GENERAL INSTRUCTIONS FOR USE** document). Incubate aerobically at 35 to 37° C and read plates after 18 to 24 and 42 to 48 hours.

Stains	Growth Results
Pseudomonas aeruginosa ATCC™ 9027	Growth with blue-green pigment surrounding the colonies; fluorescence under UV light (254 nm)
Pseudomonas aeruginosa ATCC 27853	Growth with blue-green pigment surrounding the colonies; fluorescence under UV light (254 nm)
Stenotrophomonas maltophilia ATCC 13637	Inhibition partial to complete
Escherichia coli ATCC 25922	Inhibition complete
Staphylococcus aureus ATCC 25923	Inhibition partial to complete
Uninoculated	Pale amber

PROCEDURE

Materials Provided

BD Pseudosel Agar (90 mm **Stacker™** plates). Microbiologically controlled.

Materials Not Provided

Ancillary culture media, reagents and laboratory equipment as required.

Specimen Types

This is a selective medium that can be used for all types of clinical specimens, especially for those suspected to contain a contamination from normal flora, and for non-clinical materials (see also **PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE**).

Test Procedure

Streak the specimen as soon as possible after it is received in the laboratory. The streak plate is used primarily to isolate pure cultures from specimens containing mixed flora. Alternatively, if material is being cultured directly from a swab, roll the swab over a small area of the surface at the edge; then streak from this inoculated area. In addition to **BD Pseudosel Agar**, inoculate **BD Columbia Agar with 5% Sheep Blood** and **BD MacConkey II Agar** with the specimen, in order to isolate all pathogens involved in the infection.
Incubate at 35 ± 2° C for 18 to 48 hours in an aerobic atmosphere and read the plates after 18 to 24 and after 42 to 48 hours, if necessary.

Results

After incubation, examine plates for growth and for the characteristic blue-green to green pigmentation surrounding the growth. Fluorescence may be detected under a UV lamp (254 nm). The presence of pyocyanin can be confirmed by extracting it with chloroform. *P. aeruginosa* typically produce pyocyanin and fluorescein. Both colony morphology and pigment formation may vary from strain to strain. For details consult the references.[1,3]

PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE

BD Pseudosel Agar is used for clinical specimens and non-clinical materials, if the presence of *P. aeruginosa* is expected and a contamination by other organisms, e.g., by normal flora, is high.[1,4,5]
There exist non-pigmented strains of *P. aeruginosa* that grow on the medium, but fail to produce the typical blue-green pigments.
Other organisms, e.g., certain nonfermenters and aerobic sporeformers (*Bacillus* and related genera), may occasionally grow and produce brownish to yellowish pigments on this medium. Further biochemical tests are needed to confirm an isolate as *P. aeruginosa*, even if pigment production is typical on this medium.

REFERENCES

1. Kiska, D.L., and P.H. Gilligan. 2003. *Pseudomonas. In:* Murray, P. R., E. J. Baron, J.H. Jorgensen, M. A. Pfaller, and R. H. Yolken (ed.). Manual of clinical microbiology, 8th ed. American Society for Microbiology, Washington, D.C.
2. King, E.O., M.K. Ward, and E.E. Raney. 1954. Two simple media for the demonstration of pyocyanin and fluorescein. J. Lab. Clin. Med. 44: 301
3. MacFaddin, J.F. 1985. Media for the isolation – cultivation – maintenance of medical bacteria. Volume 1. Williams and Wilkins, Baltimore, London
4. U.S. Pharmacopeial Convention, Inc. 2009. The U.S. Pharmacopeia 32/The national formulary 27--2009. U.S. Pharmacopeial Convention, Inc., Rockville, Md. USA
5. Council of Europe, 2008. European Pharmacopoeia, 6.1. European Pharmacopoeia Secretariat. Strasbourg/France

PACKAGING/AVAILABILITY

BD Pseudosel Agar

Cat. No. 254419 Ready-to-use Plated Media, cpu 20

FURTHER INFORMATION

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