BD™ Pseudomonas Isolation Agar

INTENDED USE

BD Pseudomonas Isolation Agar is used for the isolation of *Pseudomonas aeruginosa* from clinical specimens and for differentiating *P. aeruginosa* from other pseudomonads based on pigment formation.

PRINCIPLES AND EXPLANATION OF THE PROCEDURE

Microbiological method.

Pseudomonas aeruginosa is an opportunistic pathogen that can infect eyes, ears, burns and wounds.[1,2] It is also a leading cause of hospital acquired infections. Patients undergoing antibiotic therapy are especially susceptible to infection by *Pseudomonas aeruginos*a. Pseudomonas Isolation Agar is prepared according to a slight modification of the Medium A formulation of King, Ward and Raney.[3] It is a selective version of Pseudomonas Agar P.

In **BD Pseudomonas Isolation Agar**, Bacto™ Peptone provides the carbon and nitrogen necessary for bacterial growth. Irgasan®, an antimicrobial agent, selectively inhibits gram-positive and gram-negative bacteria other than *Pseudomonas* spp.[4] As well as being selective, the medium is formulated to enhance the formation of the blue or blue-green pyocyanin pigment by *Pseudomonas aeruginos*a by the addition of magnesium chloride and potassium sulfate. This pigment diffuses into the medium surrounding growth. Glycerol serves as an energy source and also helps to promote pyocyanin production.

BD Pseudomonas Isolation Agar is especially useful for isolating *Pseudomonas aeruginosa* from clinical specimens such as stools, wounds and urine.[2]

REAGENTS

BD Pseudomonas Isolation Agar

Formula* Per Liter Purified Water

Bacto Peptone	20.0 g
Magnesium Chloride	1.4
Potassium Sulfate	10.0
Irgasan®	0.025
Agar	13.6
Glycerol	20.0 ml

pH 7.0 ± 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 for 18 to 24 hours at 35 +/- 2° C.

Strains	Growth Results
Pseudomonas aeruginosa ATCC™ 27853 or ATCC 9027	Growth good to excellent; greenish colonies with greenish halos
Brevundimonas diminuta ATCC 19146	Inhibition complete
Burkholderia cepacia ATCC 25416	Inhibition partial; whitish colonies, no halos
Stenotrophomonas maltophilia ATCC 13637	Whitish to transparent colonies
Escherichia coli ATCC 25922	Inhibition complete
Staphylococcus aureus ATCC 25923	Inhibition complete
Uninoculated	Colorless to light amber

PROCEDURE

Materials Provided

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

Materials Not Provided

Ancillary culture media, reagents and laboratory equipment as required.

Specimen Types

This medium is used for the isolation of *Pseudomonas aeruginosa* and for differentiating *P. aeruginosa* from other pseudomonads. Although it is not routinely used, it is suitable for all types of clinical specimens, and is especially helpful for isolating *Pseudomonas* from stools, wounds and urine (see also **PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE**). It is also used for a variety of nonclinical materials such as cosmetics. Collect specimens or samples in sterile containers or with sterile swabs and transport immediately to the laboratory following recommended guidelines.[2,5,6]

Test Procedure

Process each specimen, using procedures appropriate for that specimen or sample.[5-7] Inoculate **BD Pseudomonas Isolation Agar** using the streak plate method to obtain isolated colonies. In order to detect the complete range of pathogens involved in the infection or contained in the material, nonselective media should also be included. For clinical specimens, **BD Columbia Agar with 5% Sheep Blood** should be used. Incubate aerobically for 18-48 hours at 35 ± 2° C.

Results

Examine for the presence of growth. *Pseudomonas aeruginosa* colonies will be green to blue-green with pigment that diffuses into the medium. Other *Pseudomonas* species (or related genera) may grow or may be inhibited but normally do not produce the green to blue-green pigment. An oxidase test might be performed from blue-green colonies for confirmation. Further biochemical tests are necessary for the identification of the isolates.

PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE

BD Pseudomonas Isolation Agar is a selective differential medium for the isolation of *Pseudomonas aeruginos*a from clinical and nonclinical materials. The specific detection of this organism is based on pyocyanin production.[1-4]

Some strains of *Pseudomonas aeruginosa* may fail to produce pyocyanin.[1] Non-*Pseudomonas aeruginosa* strains that are not completely inhibited on this medium may be encountered and must be differentiated from *Pseudomonas aeruginos*a. Consult appropriate references.[1,2,4,7,8]

The medium must not be used for isolation of *Pseudomonas* species other than *P. aeruginosa* or related genera, such as *Burkholderia* or *Stenotrophomonas* species, since they are often inhibited 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. Baron, E. J., and S. M. Finegold. 1990. Bailey & Scott's Diagnostic Microbiology, 8th ed. C.V. Mosby Company, St. Louis, MO.
3. King, E. O., M. K. Ward, and D. E. Raney. 1954. Two simple media for the demonstration of pyocyanin and fluorescein. J. Lab. & Clin. Med. 44(2): 301-307.
4. MacFaddin, J.F. 1985. Media for the isolation – cultivation – maintenance of medical bacteria. Volume 1. Williams and Wilkins, Baltimore, London
5. Thomson, R.B., and J.M. Miller. 2003. Specimen collection, transport, and processing: bacteriology. *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.
6. Forbes, B.A. and P.A. Granato. 1995. Processing specimens for bacteria. *In:* Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Yolken (ed.). Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.
7. Pezzlo, M. (ed.). 1992. Aerobic bacteriology, p. 1.0.0-1.20.47. *In* H. D. Isenberg, (ed.), Clinical microbiology procedures handbook, vol. 1. American Society for Microbiology, Washington, D.C.
8. Murray, P. R., E. J. Baron, J.H. Jorgensen, M. A. Pfaller, and R. H. Yolken (ed.). 2003. Manual of clinical microbiology, 8th ed. American Society for Microbiology, Washington, D.C.

PACKAGING/AVAILABILITY

BD Pseudomonas Isolation Agar
Cat. No. 257002 Ready-to-use Plated Media, cpu 20

FURTHER INFORMATION

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