



BD™ Desoxycholate Agar

INTENDED USE

BD Desoxycholate Agar is a weakly selective differential medium for the isolation of Gram negative enteric bacilli (mainly *Enterobacteriaceae*) from clinical specimens.

PRINCIPLES AND EXPLANATION OF THE PROCEDURE

Microbiological method.

Desoxycholate Agar was formulated by Leifson for the improved recovery of intestinal pathogens from specimens containing enteric flora.¹ It is mainly inhibitory only on Gram positive bacteria, but has originally been used for the detection of *Salmonella* and *Shigella* from human fecal specimens. Today, the medium is used alternatively to MacConkey Agar as a universal differential isolation medium for all enteric bacilli.^{2,3}

The two peptones provide nitrogen and carbon for general growth requirements. Lactose is the fermentable carbohydrate. Sodium chloride and dipotassium phosphate maintain the osmotic balance of the medium. Sodium desoxycholate and citrates inhibit gram-positive bacteria. Neutral red is a pH indicator. Differentiation is based on fermentation of lactose. Bacteria that ferment lactose produce acid and, in the presence of neutral red, form red colonies. Bacteria that do not ferment lactose form colorless colonies. The majority of normal intestinal bacteria such as *E. coli* ferment lactose (red colonies) while *Salmonella* and *Shigella* species do not ferment lactose (colorless colonies).

REAGENTS

BD Desoxycholate Agar

Formula* Per Liter Purified Water

Pancreatic Digest of Casein	5.0 g
Peptic Digest of Animal Tissue	5.0
Lactose	10.0
Sodium Desoxycholate	1.0
Sodium Chloride	5.0
Dipotassium Phosphate	2.0
Ferric Citrate	1.0
Sodium Citrate	1.0
Agar	16.0
Neutral Red	0.033
pH 7.3 ± 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 plates aerobically at $35 \pm 2^\circ\text{C}$ for 18 to 24 hours.

Strains	Growth Results
<i>Escherichia coli</i> ATCC™ 25922	Growth good to excellent, pink to red colonies with halos of bile precipitation
<i>Enterococcus faecalis</i> ATCC 29212	Inhibition partial to complete
<i>Proteus mirabilis</i> ATCC 12453	Growth fair to excellent, colourless to tan colonies; swarming inhibited
<i>Salmonella</i> Abony DSM 4224	10 to 100 colonies, yellowish to tan
<i>Salmonella</i> Typhimurium ATCC 14028	Growth good to excellent, colonies yellowish to tan
<i>Shigella flexneri</i> ATCC 12022	Growth good to excellent, small to medium-sized, yellowish to rose colonies
<i>Staphylococcus aureus</i> ATCC 25923	Inhibition complete
Uninoculated	Light pink

PROCEDURE

Materials Provided

BD Desoxycholate 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 for Gram negative rods that can be used for all types of clinical specimens (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 for isolation from this inoculated area.

Incubate plates, protected from light, at $35 \pm 2^\circ\text{C}$ for 18 to 24 h.

Results

Typical colonial morphology on **BD Desoxycholate Agar** is as follows:

Isolates	Growth Results
<i>E. coli</i>	Large, flat, rose-red, may be surrounded by a zone of bile precipitation
<i>Enterobacter/Klebsiella</i>	Large, mucoid, pale with pink center
<i>Proteus</i>	Large, colourless to tan, no swarming
<i>Salmonella</i>	Large, colourless to tan
<i>Shigella</i>	Colourless to pink
<i>Pseudomonas</i>	Irregular, colourless to brownish
Gram positive bacteria	Partial to complete inhibition

PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE

On this medium, organisms of the family *Enterobacteriaceae* and a variety of other Gram negative rods, such as *Pseudomonas* and *Aeromonas* will grow.^{2,3}

The medium does not differentiate between *Proteus* and other lactose negative Gram negative rods such as *Salmonella* or *Shigella*.

Proteus and *Salmonella* colonies will not be black on this medium.

Although certain diagnostic tests may be performed directly on this medium, biochemical and, if indicated, immunological testing using pure cultures is necessary for complete identification.⁴

REFERENCES

1. Leifson, E. 1935. New culture media based on sodium desoxycholate for the isolation of intestinal pathogens and for the enumeration of colon bacilli in milk and water. J. Pathol. Bacteriol. 40: 581-599.
2. Farmer III, J. J., and M. T. Kelly. 1991. *Enterobacteriaceae*. p.360-383. In: A. Balows, W. J. Hausler, Jr., K. L. Herrmann, H. D. Isenberg and H. J. Shadomy (ed.), Manual of clinical microbiology, 5th ed. American Society for Microbiology, Washington, D.C.
3. MacFaddin, J. F. 1985. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1, p. 269-275. Williams & Wilkins, Baltimore, MD. Hynes, M. 1942. J. Pathol. Bacteriol. 40: 581-599.
4. Farmer III, J. J.. 2003. *Enterobacteriaceae*: introduction and identification. In: Murray, P. R., E. J. Baron, J.H. Jorgensen, M. A. Pfaller, and R. H. Tenover (ed.). Manual of clinical microbiology, 8th ed. American Society for Microbiology, Washington, D.C.

PACKAGING/AVAILABILITY

BD Desoxycholate Agar

Cat. No. 254010 Ready-to-use plated media, 20 plates

FURTHER INFORMATION

For further information please contact your local BD representative.



Becton Dickinson GmbH

Tullastrasse 8 – 12

D-69126 Heidelberg/Germany

Phone: +49-62 21-30 50 Fax: +49-62 21-30 52 16

Reception_Germany@europe.bd.com

<http://www.bd.com>

<http://www.bd.com/europe/regulatory/>

ATCC is a trademark of the American Type Culture Collection

BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2013 BD