Desoxycholate Agar

Intended Use

Desoxycholate Agar is a slightly selective and differential plating medium used for isolating and differentiating gram-negative enteric bacilli.

Summary and Explanation

Desoxycholate Agar as formulated by Leifson[1] demonstrated improved recovery of intestinal pathogens from specimens containing normal intestinal flora. The medium was an improvement over other media of the time because the chemicals, citrates and sodium desoxycholate, in specified amounts, worked well as inhibitors. This medium has been used to screen for *Salmonella* spp. and *Shigella* spp. from clinical specimens.[2]

Principles of the Procedure

Peptone provides 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, ferric citrate and sodium citrate inhibit growth of gram-positive bacteria. Neutral red is a pH indicator. Agar is the solidifying agent.

Differentiation of enteric bacilli 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 ferment lactose (red colonies), while *Salmonella* and *Shigella* species do not ferment lactose (colorless colonies).

User Quality Control

Identity Specifications

Difco™ Desoxycholate Agar

Dehydrated Appearance:	Pinkish beige, free-flowing, homogeneous.
Solution:	4.5% solution, soluble in purified water upon boiling. Solution is reddish-orange, slightly opalescent.
Prepared Appearance:	Orange, slightly opalescent.
Reaction of 4.5% Solution at 25°C:	pH 7.3 ± 0.2

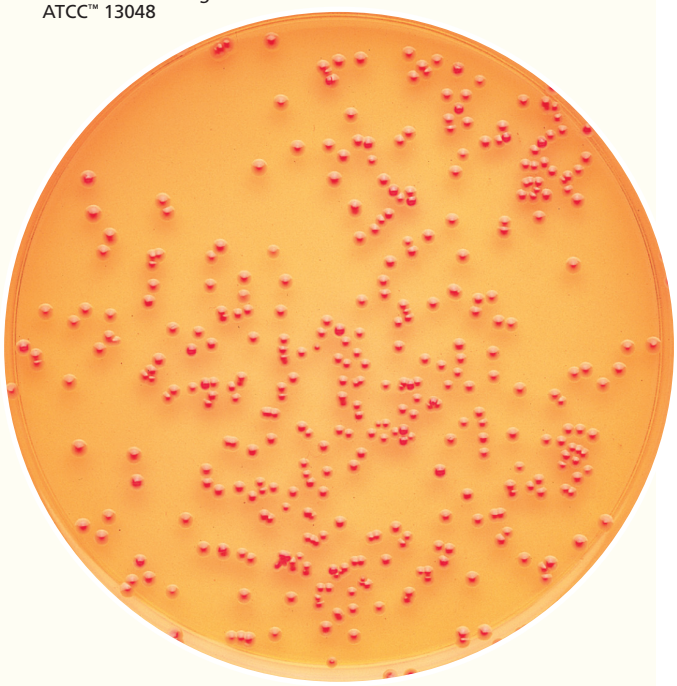
Cultural Response

Difco™ Desoxycholate Agar

Prepare the medium per label directions. Inoculate and incubate at 35 ± 2°C for 18-24 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY	COLONY COLOR
Enterococcus faecalis	29212	10^3-2×10^3	Marked inhibition	–
Escherichia coli	25922	30-300	Good	Pink w/bile precipitate
Salmonella enterica subsp. *enterica* serotype Typhimurium	14028	30-300	Good	Colorless

Enterobacter aerogenes
ATCC™ 13048



Formula

Difco™ Desoxycholate Agar

Approximate Formula* Per Liter

Peptone	10.0	g
Lactose	10.0	g
Sodium Desoxycholate	1.0	g
Sodium Chloride	5.0	g
Dipotassium Phosphate	2.0	g
Ferric Ammonium Citrate	1.0	g
Sodium Citrate	1.0	g
Agar	15.0	g
Neutral Red	0.03	g

**Adjusted and/or supplemented as required to meet performance criteria.*

Directions for Preparation from Dehydrated Product

1. Suspend 45 g of the powder in 1 L of purified water. Mix thoroughly.
2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder. Avoid overheating. DO NOT AUTOCLAVE.
3. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

For a complete discussion on the isolation of enteric bacilli, refer to appropriate procedures outlined in the references.[2-4]

Expected Results

Refer to appropriate references and procedures for results.[2-4]

References

1. Leifson. 1935. J. Pathol. Bacteriol. *40*:581.
2. Isenberg and Garcia (ed.). 2004 (update, 2007). Clinical microbiology procedures handbook, 2nd ed. American Society for Microbiology, Washington, D.C.
3. Eaton, Rice and Baird (ed.). 2005. Standard methods for the examination of water and wastewater, 21st ed., online. American Public Health Association, Washington, D.C.
4. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.

Availability

Difco™ Desoxycholate Agar

COMPF SMWW

Cat. No.	227310	Dehydrated – 500 g
Europe		
Cat. No.	254010	Prepared Plates – Pkg. of 20*
Japan		
Cat. No.	251550	Prepared Plates – Pkg. of 20*
	251824	Prepared Plates – Ctn. of 200*
	251507	Prepared **RODAC**™ Plates – Pkg. of 30*

**Store at 2-8°C.*