

Desoxycholate Lactose Agar

Intended Use

Desoxycholate Lactose Agar is a slightly selective and differential plating medium used for isolating and differentiating gram-negative enteric bacilli and for enumerating coliforms from water, wastewater, milk and dairy products.

Summary and Explanation

Desoxycholate Lactose Agar is a modification of Desoxycholate Agar formulated by Leifson.¹ His original medium demonstrated improved recovery of intestinal pathogens from specimens containing normal intestinal flora by using citrates and sodium desoxycholate in specified amounts as inhibitors to gram-positive bacteria.

Standard methods manuals for dairy² and water³ specified a modification of Desoxycholate Agar to contain less sodium desoxycholate and, accordingly, be less inhibitory to gram-positive bacteria. This formulation, known as Desoxycholate Lactose Agar, was used in pour plate procedures for isolation and enumeration of coliforms in milk, water and other specimens. The medium is no longer included in recent editions of these manuals.

Principles of the Procedure

Peptone provides nitrogen and carbon for general growth requirements. Lactose is a fermentable carbohydrate. Sodium chloride maintains the osmotic balance of the medium.

Sodium desoxycholate 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).

Formula

Difco™ Desoxycholate Lactose Agar

Approximate Formula* Per Liter	
Proteose Peptone	10.0 g
Lactose	10.0 g
Sodium Desoxycholate	0.5 g
Sodium Chloride	5.0 g
Sodium Citrate	2.0 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 42.5 g of the powder in 1 L of purified water. Mix thoroughly.

User Quality Control

Identity Specifications

Difco™ Desoxycholate Lactose Agar

Dehydrated Appearance: Pinkish beige, free-flowing, homogeneous.

Solution: 4.25% solution, soluble in purified water upon boiling. Solution is pinkish-red, very slightly to slightly opalescent.

Prepared Appearance: Pinkish-red, very slightly to slightly opalescent.

Reaction of 4.25%

Solution at 25°C: pH 7.1 ± 0.2

Cultural Response

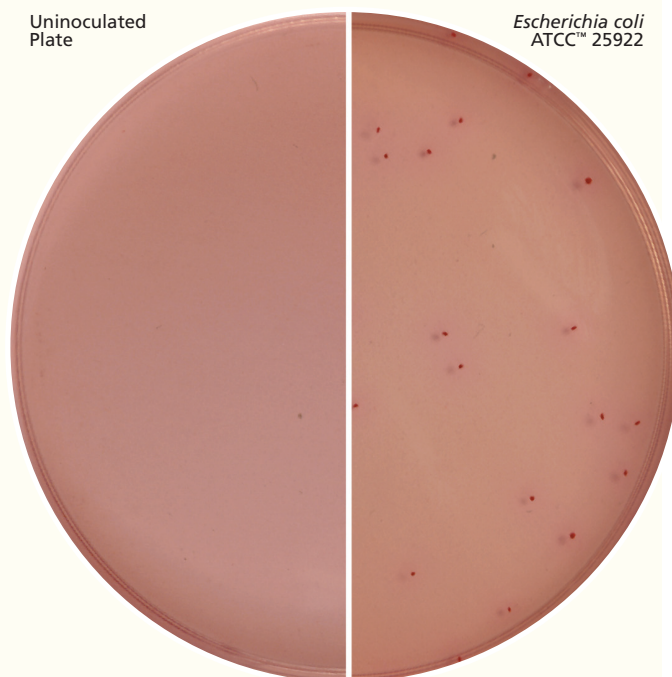
Difco™ Desoxycholate Lactose Agar

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

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY	COLONY COLOR
<i>Bacillus subtilis</i>	6633	~10 ³	Inhibition	—
<i>Enterobacter aerogenes</i>	13048	30-300	Good	Pink, may have slight bile precipitate
<i>Enterococcus faecalis</i>	29212	~10 ³	Inhibition	—
<i>Escherichia coli</i>	25922	30-300	Good	Pink w/bile precipitate
<i>Salmonella enterica</i> subsp. <i>enterica</i> serotype Typhimurium	14028	30-300	Good	Colorless

Uninoculated
Plate

Escherichia coli
ATCC™ 25922



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

See appropriate references for specific procedures.^{2,3}

Expected Results

Refer to appropriate references and procedures for results.^{2,3}

References

1. Leifson. 1935. J. Pathol. Bacteriol. 40:581.
2. American Public Health Association. 1960. Standard methods for the examination of dairy products, 11th ed. American Public Health Association, New York, N.Y.
3. American Public Health Association. 1960. Standard methods for the examination of water and wastewater, 11th ed. American Public Health Association, New York, N.Y.

Availability

Difco™ Desoxycholate Lactose Agar

Cat. No. 242010 Dehydrated – 500 g