DCLS Agar

Intended Use

DCLS Agar (Desoxycholate Citrate Lactose Sucrose Agar) is a moderately selective culture medium for the isolation of *Salmonella* and *Shigella* from fecal specimens.

Summary and Explanation

DCLS Agar is a modification of Leifson's Desoxycholate Agar, a slightly selective and differential plating medium for enterics in which the degree of inhibition is accurately controlled by the substitution of pure chemicals for the largely undefined composition of bile.¹ DCLS Agar is only one of a number of modified desoxycholate-containing media and differs from the rest by its inclusion of sucrose.²

DCLS Agar supports good growth of cultures of *Shigella* and *Salmonella*, and inhibits the growth of coliforms and *Proteus*. In addition to the human pathogens, *S. pullorum* and *S. gallinarum* grow well.

Principles of the Procedure

This medium contains peptones and beef extract, which supply essential nutrients for the support of bacterial growth. The citrate and desoxycholate compounds serve as inhibitors of gram-positive bacteria and coliforms. The incorporation of two sugars permits the formation of red colonies by organisms that rapidly ferment either sucrose or lactose, or both; e.g., *Proteus vulgaris*, as well as typical coliforms. This permits the more accurate selection of members of the genera *Shigella* and *Salmonella*, which form colorless or nearly colorless colonies on DCLS Agar.

Formula

BBL[™] DCLS Agar

5		
Approximate Formula* Per Liter		
Sodium Desoxycholate	2.5	g
Sodium Citrate	10.5	g
Lactose	5.0	g
Sucrose	5.0	g
Pancreatic Digest of Casein		g
Peptic Digest of Animal Tissue	3.5	g
Beef Extract	3.0	g
Sodium Thiosulfate	5.0	g
Neutral Red	0.03	g
Agar	12.0	g
*Adjusted and/or supplemented as required to meet performance criteria.		0

Directions for Preparation from Dehydrated Product

- 1. Suspend 50 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 excessive heating. DO NOT AUTOCLAVE.
- 3. Cool the medium to approximately 45°C and pour into plates using about 20 mL per plate. The plates may be used at once or refrigerated for a few days.
- 4. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

Inoculate and incubate plates, protected from light, at $35 \pm 2^{\circ}$ C for 18-24 hours. If negative after 24 hours, reincubate an additional 24 hours.

A nonselective medium should also be streaked to increase the chance of recovery when the population of gram-negative organisms is low and to provide an indication of other organisms present in the specimen.

Expected Results

Typical colonial appearance on DCLS Agar is as follows:

/ith
ts
1

References

Leifson. 1935. J. Pathol. Bacteriol. 40:581.
Hajna and Damon. 1956. Appl. Microbiol. 4:341.

Availability

BBL[™] DCLS Agar

Cat. No. 211144 Dehydrated – 500 g Europe Cat. No. 254012 Prepared Plates – Pkg. of 20* *Store at 2-8°C.



User Quality Control

Identity Specifications BBL[™] DCLS Agar

Dehydrated Appearance:	Fine, homogeneous powder.
Solution:	5.0% solution, soluble in purified water upon boiling. Solution is medium to dark, red-orange to orange-rose, clear to slightly hazy.
Prepared Appearance:	Medium to dark, red-orange to orange-rose, clear to slightly hazy.
Reaction of 5.0% Solution at 25°C:	рН 7.2 ± 0.2

Cultural Response BBL™ DCLS Agar

Prepare the medium per label directions. Inoculate and incubate at $35 \pm 2^{\circ}$ C for 24 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY	COLONY COLOR
Escherichia coli	25922	10 ⁴ -10 ⁵	Good	Pink to rose-red
<i>Salmonella enterica</i> subsp. <i>enterica</i> serotype Typhimurium	14028	10 ³ -10 ⁴	Good	Colorless to pale pink
Shigella flexneri	12022	10 ³ -10 ⁴	Good	Colorless to pale pink
Enterococcus faecalis	29212	10 ⁴ -10 ⁵	None	-



