

## DEOXYCHOLATE AGAR (7130)

### Intended Use

**Deoxycholate Agar** is used for the isolation and differentiation of Gram-negative enteric bacilli.

### Product Summary and Explanation

Deoxycholate Agar was described first by Leifson for isolation of intestinal pathogens and the enumeration of intestinal pathogens in milk and water.<sup>1</sup> Deoxycholate Agar was an improvement over other media because of the chemicals, citrates and sodium deoxycholate worked well as inhibitors. This medium is used to screen *Salmonella* spp. and *Shigella* spp. from clinical specimens.<sup>2</sup>

### Principles of the Procedure

Enzymatic Digest of Casein and Enzymatic Digest of Animal Tissue are the nitrogen and vitamin sources in Deoxycholate Agar. Differentiation of enteric bacilli is based on fermentation of Lactose. Sodium Chloride and Dipotassium Phosphate maintain the osmotic environment of the medium. Sodium Deoxycholate, Ferric Citrate, and Sodium Citrate inhibit growth of Gram-positive bacteria. Neutral Red is a pH indicator. Agar is the solidifying agent.

### Formula / Liter

Enzymatic Digest of Casein .....	5 g
Enzymatic Digest of Animal Tissue .....	5 g
Lactose .....	10 g
Sodium Deoxycholate .....	1 g
Sodium Chloride .....	5 g
Dipotassium Phosphate .....	2 g
Ferric Citrate .....	1 g
Sodium Citrate .....	1 g
Neutral Red .....	0.03 g
Agar .....	16 g

Final pH: 7.3 ± 0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

### Precautions

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, skin, and respiratory system.

### Directions

1. Suspend 46 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. DO NOT AUTOCLAVE.

### Quality Control Specifications

**Dehydrated Appearance:** Powder is homogeneous, free flowing and beige to pink-beige.

**Prepared Appearance:** Prepared medium is light to medium pink-red and trace to slightly hazy.

**Expected Cultural Response:** Cultural response on Deoxycholate Agar incubated at 35 ± 2°C and examined for growth after 18 - 24 hours.

Microorganism	Approx. Inoculum (CFU)	Expected Results	
		Growth	Reaction
<i>Enterococcus faecalis</i> ® 29212	~ 1000	Inhibition	---
<i>Escherichia coli</i> ATCC® 25922	~ 1000	Partial to complete inhibition	Pink ± bile precipitate, where recovered
<i>Salmonella choleraesuis</i> ® 13076	10 - 300	Growth	Colorless
<i>Salmonella typhimurium</i> ATCC® 14028	10 - 300	Growth	Colorless
<i>Shigella flexneri</i> ATCC® 12022	10 - 300	Growth	Colorless
<i>Staphylococcus aureus</i> ATCC® 25923	~ 1000	Inhibition	---

The organisms listed are the minimum that should be used for quality control testing.

### Test Procedure

For a complete discussion on the isolation and identification of enteric bacilli and Deoxycholate Agar, refer to appropriate references.

### Results

Differentiation of enteric bacilli is based on fermentation of lactose. Bacteria that ferment lactose produce acid and, in the presence of Neutral Red, form pink to red colonies. Bacteria that do not ferment lactose form colorless colonies. The majority of normal intestinal bacteria ferment lactose (red colonies) while *Salmonella* spp. and *Shigella* spp. do not ferment lactose (colorless colonies).

### Storage

Store dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

### Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

### Limitation of the Procedure

Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

### Packaging

<b>Deoxycholate Agar</b>	<b>Code No.</b>	<b>7130A</b>	<b>500 g</b>
		<b>7130B</b>	<b>2 kg</b>
		<b>7130C</b>	<b>10 kg</b>

### 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.* **40**:581-599.
2. **Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Tenover (eds.).** 1995. *Manual of clinical microbiology*, 6<sup>th</sup> ed. American Society for Microbiology, Washington, D.C.

### Technical Information

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.



**NEOGEN**  
CORPORATION

620 Lesher Place, Lansing MI 48912  
517/372-9200 • 800/783-3212 • fax: 800/875-8563  
neogen-info@neogen.com • www.neogen.com