

Deoxycholate Citrate Agar (DCA)**(M930)**

Moderately selective and differential medium for the isolation of enteric pathogens, especially Salmonella and Shigella species.

Composition

Ingredients	g/ L
Heart Infusion solids -----	10.000
Proteose peptone -----	10.000
Lactose -----	10.000
Sodium deoxycholate -----	5.000
Neutral red -----	0.020
Sodium citrate -----	20.000
Ferric ammonium citrate -----	2.000
Agar -----	13.500

Description

Deoxycholate Citrate Agar is a modification of Desoxycholate Agar Leifson's formula and is ideal for the investigation of pathogenic Enterobacteria. It is particularly useful in isolating Salmonella and many Shigella spp.

The Gram-positive organisms, coliforms and many Proteus spp. are highly inhibited by the increased concentration of sodium citrate and sodium deoxycholate. Ferric citrate aids in the detection of H₂S production. Meat peptone and beef extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Lactose is the fermentable carbohydrate. Neutral red is a pH indicator. Bacteriological agar is the solidifying agent.

Lactose-fermenting bacteria form red colonies in the presence of Neutral red. Lactose-fermenting colonies may have a deoxycholate precipitation zone around them. Lactose non-fermenters will appear as colorless colonies. H₂S producers will have black centers. Salmonella typhi, S. paratyphi and Shigella types yield well-developed colorless colonies while lactose-positive organisms like Escherichia coli are pink to red.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines. After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. For professional use only. Follow good microbiological lab practices while handling specimens and culture.

Limitations

1. Individual organisms differ in their growth requirement and may show variable growth patterns.
2. Each lot of the medium has been tested for the organisms specified on the COA.
3. The surface of the medium should be dry when inoculated.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality control**Physical/Chemical control**

Color : Reddish orange pH: 7.30-7.70

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Microbiological activity

Organisms	Inoculum CFU/ml	Growth
Salmonella Typhimurium ATCC 14028	50-100	Colorless colonies, H ₂ S (+)
Shigella flexneri ATCC 12022	50-100	Colorless colonies, H ₂ S (-)
Escherichia coli ATCC 25922	50-100	Partial inhibition, Pink with bile precipitate, H ₂ S (-)
Staphylococcus aureus ATCC 25923	50-100	inhibition

Storage and Shelf Life

Store between 2-8°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques.

Reference

1. Frierker C.R., 1987, J. Appl. Bact., 63:99.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.