

Desoxycholate citrate agar

Desoxycholate Citrate Agar is a moderately selective and differential plating medium used for isolating enteric bacilli, particularly *Salmonella* and many *Shigella* species

REF: BS.1/DO01.100.0100
REF: BS.1/DO01.500.0500

100 Gram
500 Gram

REF: BS.1/DO01.250.0250

250 Gram

CLINICAL SIGNIFICANCE

Desoxycholate Citrate 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. Leifson modified his original medium by increasing the concentration of sodium citrate and sodium desoxycholate and found Desoxycholate Citrate Agar reliable for isolating many *Salmonella* and *Shigella* species.¹ Desoxycholate Citrate Agar effectively isolates intestinal pathogens (*Salmonella* and *Shigella* species) by inhibiting coliforms and many *Proteus* species.

METHOD PRINCIPLE

Infusion from meat is a source of carbon and nitrogen. This ingredient is used because the inhibition of coliforms produced is greater than when an extract or simple peptone is used.¹ Peptone provides carbon, nitrogen, vitamins and minerals. Lactose is the fermentable carbohydrate. Sodium citrate and sodium desoxycholate inhibit gram-positive bacteria, coliforms and *Proteus* species. Ferric ammonium citrate aids in the detection of H₂S-producing bacteria. Neutral red is a pH indicator. Agar is the solidifying agent. In the presence of neutral red, bacteria that ferment lactose produce acid and form red colonies. Bacteria that do not ferment lactose form colorless colonies. If the bacteria produce H₂S, the colonies will have black centers. The majority of normal intestinal bacteria ferment lactose and do not produce H₂S (red colonies without black centers). *Salmonella* and *Shigella* spp. do not ferment lactose but *Salmonella* may produce H₂S (colorless colonies with or without black centers). Lactose-fermenting colonies may have a zone of precipitation around them caused by the precipitation of desoxycholate in the presence of acid.

MEDIA COMPOSITION

Item	Formula per liter of medium
- Meat, Infusion from 330 g	9.500 gm.
- Proteose Peptone No. 3.	10.00 gm.
- Lactose	10.00 gm.
- Sodium Citrate	20.00 gm.
- Ferric Ammonium Citrate	2.000 gm.
- Sodium Desoxycholate	5.000 gm.
- Agar	13.50 gm.
- Neutral Red	0.020 gm.

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environmental contamination.

S61: avoid release in environment.

For further information, refer to the desoxycholate citrate agar material safety data sheet.

STORAGE AND STABILITY (2)

BioScien desoxycholate citrate agar dehydrated media are stable until expiration date stated on label when properly stored 10-30°C. The prepared medium should be stored at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Final pH 7.5 ± 0.2 at 25°C

MEDIA PREPARATION

1. Suspend 70 g of the powder in 1 L of purified water.
2. Mix thoroughly. And adjust pH to 7.5 ± 0.2 at 25°C
3. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
4. Pour into sterile petri plates

Avoid overheating. DO NOT AUTOCLAVE.

Deterioration

The color of **BioScien** desoxycholate citrate is Pinkish-beige, free-flowing, homogeneous powder. If there are any physical changes, discard the medium.

The hydrated medium is Orange-red, slightly opalescent gel forms in Petri plates, media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

SPECIMEN COLLECTION AND PRESERVATION (1-3)

Clinical samples - urine; Food and dairy samples; Water samples.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile petri-dishes
- Incubator

PERFORMANCE CHARACTERISTICS

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








Test Organisms	Growth	Colour of Colony
<i>Enterococcus faecalis</i> 29212	Marked to complete inhibition	-
<i>Escherichia coli</i> ATCC 25922	Partial to complete inhibition	Pink with bile precipitate
<i>Salmonella enterica</i> subsp. <i>enterica</i> serotype <i>Typhimurium</i> 14028	Fair to good	Colorless
<i>Shigella flexneri</i> 12022	Fair	Colorless

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact **BioScien** technical support.

REFERENCES

1. Leifson. 1935. J. Pathol. Bacteriol. 40:581.

SYMBOLS IN PRODUCT LABELLING		
IVD	For in-vitro diagnostic use	 Number of <n> test in the pack
LOT	Batch Code/Lot number	 Caution
REF	Catalogue Number	 Do not use if package is damaged
	Temperature Limitation	 Consult Instruction for use
	Expiration Date	
	Manufactured by	