DEOXYCHOLATE AGAR TM 087

INTENDED USE

For direct differential count of coliforms for isolation of enteric pathogens from rectal swabs, faeces and other pathological specimens

COMPOSITION

Ingredients	Gms/Ltr.
Agar	15.000
Lactose	10.000
Peptone	10.000
Sodium chloride	5.000
Dipotassium phosphate	2.000
Sodium deoxycholate	1.000
Ferric citrate	1.000
Sodium citrate	1.000
Neutral red	0.030

PRODUCT SUMMARY AND EXPLAINATION

Deoxycholate Agar was first described by Leifson for the isolation of intestinal pathogens and for the enumeration of colon bacilli in milk and water. This media is used for the isolation and maximum recovery of intestinal pathogens belonging to *Salmonella* and *Shigella* species.

PRINCIPLE

Peptone provides carbon, nitrogen, long chain amino acids, vitamins and minerals. Coliform bacteria and gram-positive bacteria are inhibited or greatly suppressed due to sodium deoxycholate and sodium citrate. Sodium chloride maintains the osmotic balance of the medium while dipotassium phosphate buffers the medium. Lactose helps in differentiating enteric bacilli as lactose fermenters produce red colonies while lactose non-fermenters produce colourless colonies. Coliform bacteria if present form pink colonies on this medium. The degradation of lactose causes acidification of the medium surrounding the relevant colonies and the pH indicator neutral red changes its colour to red. These colonies usually are also surrounded by a turbid zone of precipitated deoxycholic acid due to acidification of the medium. Sodium deoxycholate combines with neutral

red in an acidic environment, causing the dye to go out of the solution with the subsequent precipitation of deoxycholate.

INSTRUCTIONS FOR USE

1. Dissolve 45.03 grams in 1000 ml distilled water.
2. Gently heat to boiling with gentle swirling and dissolve the medium completely.
3. DO NOT AUTOCLAVE. Avoid excessive or prolonged heating during reconstitution.
4. Cool to 45-50°C.
5. Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder: Light yellow to pink colour, free flowing powder.
Appearance of prepared medium: Reddish orange colour, clear to slightly opalescent gel.

pH (at 25°C): 7.3 ± 0.2

CULTURE RESPONSE

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

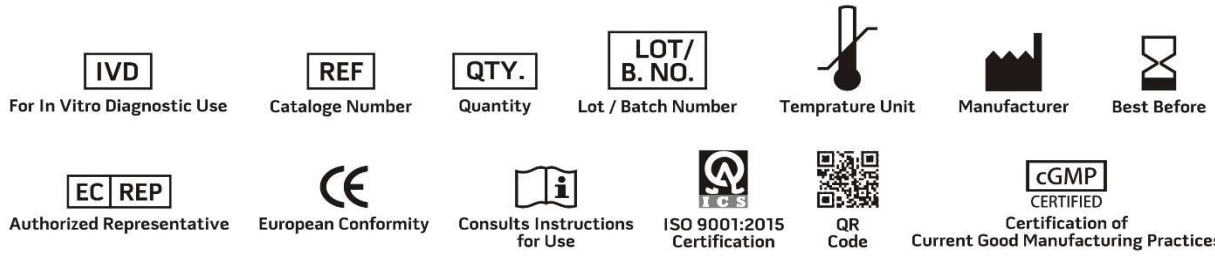
Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Recovery (%)	Appearance of colony
Salmonella typhi	6539	50 - 100	Luxuriant	≥ 50%	Colourless
Salmonella typhimurium	14028	50 - 100	Luxuriant	≥ 50%	Colourless
Shigella flexneri	12022	50 - 100	Good	40 - 50%	Colourless colonies
Escherichia coli	25922	50 - 100	Good	40 - 50%	Pink colonies with bile ppt.
Enterococcus faecalis	29212	≥ 10^3	Inhibited	0%	---
Staphylococcus aureus	25923	≥ 10^3	Inhibited	0%	---

STORAGE & STABILITY

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

REFERENCES

1. Leifson, 1935, J. Path. Bacteriol., 40:581.
2. Speck M. L., (Ed.), 1984, Compendium of Methods for the Microbiological Examination of Foods, 2nd ed., APHA, Washington, D.C.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
4. 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. Revision : 03 / 2018 .
5. Lapage S., Shelton J. and Mitchell T., 1970, Methods in Microbiology', Norris J. and Ribbons D., (Eds.), Vol. 3A, Academic Press, London.
6. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.