

TM 087 – DEOXYCHOLATE AGAR

INTENDED USE

For direct differential count of coliforms in dairy products and also for isolation of enteric pathogens from rectal swabs, faeces and other pathological specimens.

PRODUCT SUMMARY AND EXPLANATION

Deoxycholate Agar is prepared as per the formulation by Leifson. This media is used for the isolation and maximum recovery of intestinal pathogens belonging to *Salmonella* and *Shigella* species. The selectivity of medium permits the use of fairly heavy inocula without danger of overgrowth of the *Shigella* and *Salmonella* by other micro-flora.

For the routine examination of stool and urine specimens, it is recommended that other media such as MacConkey Agar, Bismuth Sulphite Agar etc. be used in conjunction with this medium. It can also be used to streak specimen from Selenite Broth cultures. This is particularly recommended for the detection of *Shigella* and *Salmonella* in the examination of rectal swabs and faeces. These organisms produce colourless colonies on this medium.

COMPOSITION

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

PRINCIPLE

The medium consists of Peptone which 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.

Citrate and iron (Fe) combination has a strong hydrolyzing effect on agar when the medium is heated, producing a soft and unelastic agar. If autoclaved the agar becomes soft and almost impossible to streak. Surface colonies of non-lactose fermenters often absorb a little colour (pinkish) from the medium and organisms may be mistaken for coliform.

INSTRUCTION FOR USE



- Dissolve 45.03 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Avoid excessive or prolonged heating during reconstitution.
- Cool to 45-50°C. Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

- Appearance of Powder** : Light yellow to pink homogeneous free flowing powder.
- Appearance of prepared medium** : Reddish orange coloured, clear to slightly opalescent gel forms in Petri plates.
- pH (at 25°C)** : 7.3 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
<i>Salmonella Typhi</i>	6539	50-100	Luxuriant	≥50%	Colourless	35-37°C	18-24 Hours
<i>Staphylococcus aureus subsp. aureus</i>	25923	≥10 ³	Inhibited	0%	-	35-37°C	18-24 Hours
<i>Enterococcus faecalis</i>	29212	≥10 ³	Inhibited	0%	-	35-37°C	18-24 Hours
<i>Escherichia coli</i>	25922	50-100	Good	40-50%	Pink with bile precipitate	35-37°C	18-24 Hours
<i>Salmonella Enteritidis</i>	13076	50-100	Good-luxuriant	≥50%	Colourless	35-37°C	18-24 Hours
<i>Salmonella Typhimurium</i>	14028	50-100	Good-luxuriant	≥50%	Colourless	35-37°C	18-24 Hours
<i>Shigella flexneri</i>	12022	50-100	Good	40-50%	Colourless	35-37°C	18-24 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.



STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°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.













Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
2. 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.
3. Lapage S., Shelton J. and Mitchell T., 1970, Methods in Microbiology', Norris J. and Ribbons D., (Eds.), Vol. 3A, Academic Press, London.
4. Leifson, 1935, J. Path. Bacteriol., 40:581.
5. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.
6. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative <small>MedNet GmbH Birkstrasse 10, 49163 Maenster, Germany</small>	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

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

***For Lab Use Only**
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