TM 088 – DEOXYCHOLATE CITRATE AGAR, MODIFIED (HYNES)

INTENDED USE

For selective isolation of *Salmonella* and *Shigella* species.

PRODUCT SUMMARY AND EXPLANATION

Deoxycholate Citrate Agar, Modified (Hynes) is a selective medium used for isolation and identification of Salmonellae and Shigallae. Leifson developed Deoxycholate Agar as a differential medium containing pure chemicals, citrates and deoxycholate as inhibitors. Leifsons medium has been modified by many authors by several ways. Deoxycholate Citrate Agar, Modified (Hynes) is a differential medium modified by Hynes for the isolation of Salmonellae and Shigellae. Deoxycholate Citrate Agar, Modified consist of more concentrations of inhibitors and is used in food microbiology.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	5.000
Beef extract	5.000
Lactose	10.000
Sodium citrate	8.500
Ferric citrate	1.000
Sodium deoxycholate	5.000
Sodium thiosulphate	5.400
Neutral red	0.020
Agar	12.000

PRINCIPLE

The medium consists of Peptone and Beef extract 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, sodium citrate and ferric citrate. 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 causing the pH indicator neutral red to change 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. The reduction of sodium thiosulphate to sulfide is indicated by the formation of black iron sulfide. *Salmonella* and *Shigella* species do not ferment lactose but *Salmonella* may produce H_2S forming colorless colonies with or without black centers.

INSTRUCTION FOR USE

- Dissolve 51.92 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Excessive heating is detrimental.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to pinkish beige 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	H_2S Production	Incubation Temperature	Incubation Period
Bacillus cereus	10876	>=10^3	Inhibited	0%	-	-	35 -37 °C	18-24 Hours
Escherichia coli	25922	50-100	Poor-fair	20-30%	Red	Negative reaction	35 -37 °C	18-24 Hours
Salmonella Enteritidis	13076	50-100	Good-luxuriant	>=50%	Colourless	Positive reaction, black centered colonies	35 -37 °C	18-24 Hours
Salmonella Typhimurium	14028	50-100	Good-luxuriant	>=50%	Colourless	Positive reaction, black centered colonies	35 -37 °C	18-24 Hours
Shigella flexneri	12022	50-100	Good-luxuriant	>=50%	Colourless	Negative reaction	35 -37 °C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Good-luxuriant	>=50%	Light pink	Negative reaction	35 -37 °C	18-24 Hours
Shigella sonnei	25931	50-100	Good-luxuriant	>=50%	Pink with bile precipitate	Negative reaction	35 -37 °C	18-24 Hours
Staphylococcus aureus subsp. aureus	25923	>=10^3	Inhibited	0%	-	-	35 -37 °C	18-24 Hours

PACKAGING:

In pack size of 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. Hynes M., 1942, J. Path. Bacteriol., 54, 193-207.
2. senberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
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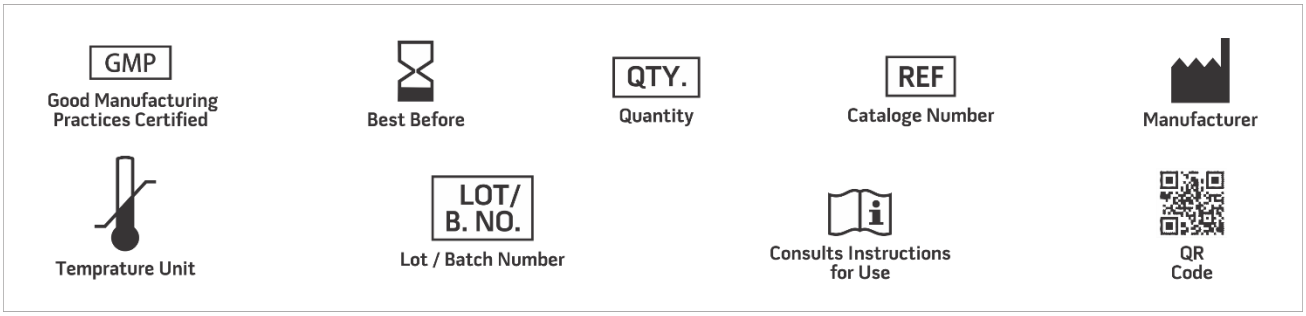
4. Leifson, 1935, J. Pathol. Bacteriol., 40:581.
5. Speck M. (Ed.), 1984, Compendium of Methods for the Microbiological Examination of Foods, 2nd ed., APHA, Washington, D.C.



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

***For Lab Use Only**

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