

## CM 20551 – DESOXYCHOLATE-CITRATE AGAR MEDIUM 14 (as per IP)

### INTENDED USE

For the selective isolation and identification of Salmonellae in accordance.

### PRODUCT SUMMARY AND EXPLANATION

Desoxycholate Citrate Agar is prepared as per the modified formula of Leifson and is also recommended by Indian Pharmacopoeia 2007. This medium is used for the isolation and maximum recovery of intestinal pathogens belonging to Salmonella and Shigella groups from foods and pharmaceutical products. However, it is recommended to use less inhibitory medium when Shigellae have to be isolated. Salmonella, major causative agent of enteric disease especially food borne toxic infection and typhoid was first observed by Eberth in 1880. This medium is routinely used to check the presence of Salmonella in food and pharmaceutical products.

Proteus and other Gram positive organisms are inhibited due to higher concentration of both citrate and deoxycholate salts in this medium. Sodium desoxycholate at pH 7.3 to 7.5 is inhibitory for gram-positive bacteria. Sodium thiosulphate also helps in reactivation of sulphur containing compounds and prevents the desiccation of these compounds during storage. It also forms the substrate for enzyme thiosulphate reductase, which breaks it; to form H<sub>2</sub>S. H<sub>2</sub>S then reacts with Fe ions in the medium and produces black FeS precipitate. This gives the indicative appearance of colonies with black center. Sodium thiosulphates are also inactivators of halogens and can minimize its toxicity in the testing sample, if any during microbiological tests. Citrate salt, in the concentration included in the formulation, are inhibitory to gram-positive bacteria and most other normal intestinal organisms.

### COMPOSITION

Ingredients	Gms / Ltr
Peptone	10.000
Beef extract	10.000
Lactose monohydrate	10.000
Trisodium citrate	20.000
Ferric citrate	1.000
Sodium desoxycholate	5.000
Neutral red	0.020
Agar	13.500

### PRINCIPLE

The medium consists of peptone and beef extract which is a source of carbon, nitrogen, vitamins and minerals that are required for the growth of microorganisms. Lactose monohydrate supplies fermentable carbohydrate source in this medium. Neutral red acts as indicators, in presence of which lactose fermenters like coliform bacteria give pink colonies while lactose non-fermenters give colourless colonies. This medium provides essential growth factors for growth of several auxotrophic strains of Paratyphi and Typhi. The selectivity of this medium permits the use of fairly heavy inocula without danger of overgrowth of the Shigella and Salmonella by other microflora.

### INSTRUCTION FOR USE

Dissolve 69.02 grams in 1000 ml purified/distilled water.



Heat to boiling to dissolve the medium completely. Agitate to prevent charring. DO NOT AUTOCLAVE/ OVERHEAT OR REMELT.

Cool to 45-50°C. Mix well and pour into sterile Petri plates. Dry the agar surface before use.

#### 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. Recovery rate is considered as 100% for bacteria growth on Soyabean Casein Digest Agar.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
Salmonella Typhimurium	14028	50-100	Good-luxuriant	>=50%	Colourless and opaque with or without black centres	36 -38 °C	18-24 Hours
Salmonella Enteritidis	13076	50-100	Good-luxuriant	>=50%	Colourless and opaque with or without black centres	36 -38 °C	18-24 Hours
Salmonella Typhi	6539	50-100	Good-luxuriant	>=50%	Colourless and opaque with or without black centres	36 -38 °C	18-24 Hours
Escherichia coli	8739	50-100	Poor	0-10%	Pink with bile precipitate	36 -38 °C	18-24 Hours
Shigella flexneri	12022	50-100	Poor	0-10%	Colourless	36 -38 °C	18-24 Hours
Enterococcus faecalis	29212	>=10 <sup>3</sup>	Inhibited	0%	-	36 -38 °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.



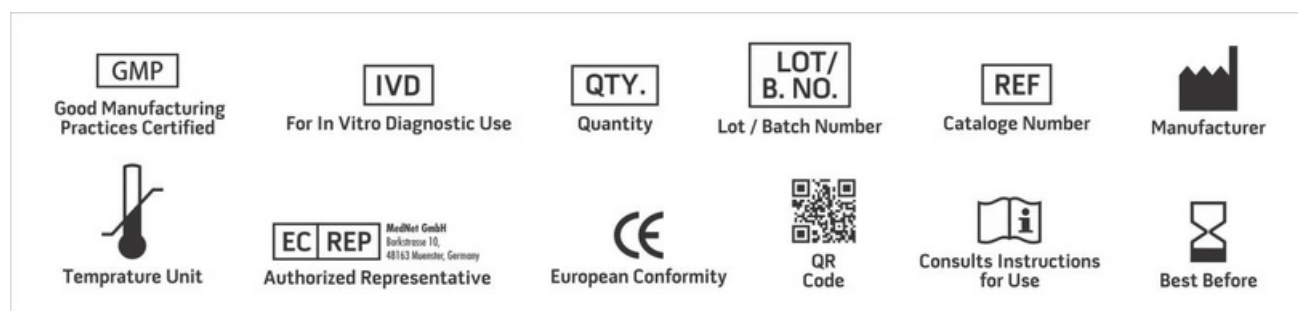
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

#### DISPOSAL

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

#### REFERENCES

1. Leifson, 1935, J. Path. Bact., 40:581.
2. Indian Pharmacopoeia, 2007, Govt. of India, Ministry of Health and Family Welfare, New Delhi, India.
3. Speck M. (Eds.), 1984 Compendium of Methods for the Microbiological Examination of Foods, 2nd ed., APHA, Washington, D.C.
4. Frierker C.R., 1987, J. Appl. Bact., 63:99.



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

\*For LabUse Only

