TMS 05- SIMMON'S CITRATE AGAR SLANT

INTENDED USE

To differentiate gram-negative bacteria on the basis of citrate utilization.

PRODUCT SUMMARY AND EXPLANATION

SIMMONS CITRATE AGAR (as per BIS) is used for differentiation between faecal coliforms and members of the aerogenes group on the basis of citrate utilization. Initially the citrate medium was developed by Koser containing ammonium salt as the only nitrogen source and citrate as the only carbon source for differentiating *Escherichia coli* and *Enterobacter aerogenes* by IMViC tests. Later on Simmons modified Kosers formulation by adding agar and bromothymol blue. Simmons Citrate Agar is recommended for differentiation of enteric Gram-negative bacilli from laboratory specimens, water samples and food samples.

COMPOSITION

Ingredients	Gms / Ltr
Agar	15.000
Sodium chloride	5.000
Sodium citrate	2.000
Ammonium dihydrogen phosphate	1.000
Dipotassium phosphate	1.000
Magnesium sulphate	0.200
Bromothymol blue	0.080

PRINCIPLE

This medium contains Ammonium Dihydrogen Phosphate, which is the sole source of nitrogen. Dipotassium Phosphate acts as a buffer. Sodium Chloride maintains the osmotic balance of the medium. Sodium Citrate is the sole source of carbon in this medium. Magnesium Sulfate is a cofactor for a variety of metabolic reactions. Agar is the solidifying agent. Organisms capable of utilizing ammonium dihydrogen phosphate and citrate will grow unrestricted on this medium.

When the bacteria metabolize citrate, the ammonium salts are broken down to ammonia, which increases alkalinity. The shift in pH turns the bromothymol blue indicator in the medium from green to blue above pH 7.6.

INSTRUCTION FOR USE

Inoculate the bacterial culture with an inoculating needle by streaking the slants.

QUALITY CONTROL SPECIFICATIONS

Appearance : Forest green coloured, clear to slightly opalescent gel forms in tubes as slants

Quantity of Medium : 8 ml of medium in glass tube.

pH (at 25°C) : 6.8±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Citrate Utilization	Incubation Temperature	Incubation Time
# Klebsiella aerogenes	13048	50-100	Good-Luxuriant	positive reaction, blue colour	35-37°C	18 - 24 hours.
Escherichia coli	25922	>=10^4	Inhibited	-	35-37°C	18 - 24 hours.
Salmonella Choleraesuis	12011	50-100	Good-Luxuriant	positive reaction, blue colour	35-37°C	18 - 24 hours.
Salmonella Enteritidis	13076	50-100	Good-Luxuriant	positive reaction, blue colour	35-37°C	18 - 24 hours.
Salmonella Typhimurium	14028	50-100	Good-Luxuriant	positive reaction, blue colour	35-37°C	18 - 24 hours.
Salmonella Typhi	6539	50-100	fair-good	negative reaction, green colour	35-37°C	18 - 24 hours.
Shigella dysenteriae	13313	>=10^3	Inhibited	-	35-37°C	18 - 24 hours.

Formerly known as *Enterobacter aerogenes*

PACKAGING:

Kit of 10 Ready-To-Use Slants containing 8 ml medium in each glass tube.

STORAGE

On receipt, store tubes in the dark at 2 – 8°C. Avoid freezing and overheating. Do not open until ready to use. Minimize exposure to light. Tubed media stored as labeled until just prior to use may be inoculated up to the expiration date and incubated for the recommended incubation times. Allow the medium to warm to room temperature before inoculation.

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

DISPOSAL

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques.

REFERENCES

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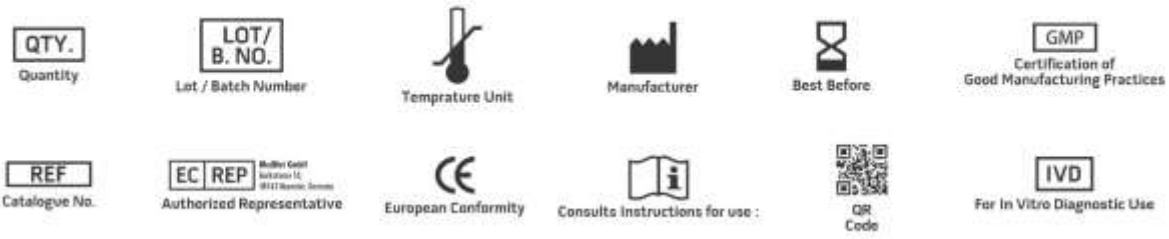

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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