

Simmons Citrate Agar**(M1640)**

Simmons Citrate Agar is recommended for use in the differentiation of gram-negative enteric bacilli based on citrate utilization.

Composition

Ingredients	g/ L
Ammonium dihydrogen phosphate	1.000
Magnesium sulphate	0.200
Dipotassium phosphate	1.000
Sodium citrate	2.000
Sodium chloride	5.000
Bromo thymol blue	0.080
Agar	15.000

Description

Simmons Citrate Agar contains ammonium dihydrogen phosphate, which supplies the only source of nitrogen, and sodium citrate, which serves as the sole source of carbon. Organisms capable of utilizing ammonium dihydrogen phosphate and citrate will grow unrestricted on this medium. Bromothymol blue acts as a pH indicator, causing the medium to change from green (neutral) to blue (alkaline) with increasing pH. Citrate utilization produces an alkaline carbonate, resulting in a deep blue color change within the agar. The medium will remain green if organisms are not able to metabolize sodium citrate.

Type of specimen

Isolated microorganisms

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines. After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. For professional use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture.

Limitations

1. Use a light inoculum to streak the slant; a heavy inoculum may result in false-positive results.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality control**Physical/Chemical control**

Color : Green pH: 6.70-6.90

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Microbiological activity

Organisms	Inoculum CFU/ml	Growth, Citrate utilisation
Escherichia coli ATCC 25922	50-100	Inhibited, no colour change
Klebsiella pneumoniae ATCC 700603	50-100	Growth, positive reaction blue colour
Salmonella Typhimurium ATCC 14028	50-100	Growth, positive reaction, blue colour

Storage and Shelf Life

Store between 2-8°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

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 sample must be decontaminated and disposed of in accordance with current laboratory techniques.

Reference

1. Koneman, E.W., et al. Color Atlas and Textbook of Diagnostic Microbiology, J.B. Lippincott Company, Philadelphia, PA.
2. Koser, S.A. 1923. Utilization of the salts of organic acids by the colon-aerogenes group. J. Bacteriol.,8:493.
3. MacFaddin, J.F. 1985. Media for Isolation, Cultivation, Identification, Maintenance of Bacteria, Vol. I. Williams & Wilkins, Baltimore, MD.
4. Jorgensen., et al. Manual of Clinical Microbiology, American Society for Microbiology, Washington, D.C.
5. Quality Assurance for Commercially Prepared Microbiological Culture Media, M22. Clinical and Laboratory Standards Institute (CLSI - formerly NCCLS)