

Citrate Agar

Designed for cultivation of iron bacteria from soil samples.

REF: BS.1/CT01.100.0100	100 Gram	REF: BS.1/CT01.250.0250	250 Gram
REF: BS.1/CT01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

The iron bacteria oxidize ferrous iron to ferric state, which precipitate as ferric hydroxide around cells. These bacteria are usually non-filamentous and spherical or rod shaped. Certain algae also transform ferrous salts to ferric state and deposit the precipitation around the colonies. The ferric hydroxide deposits give a brown or rust red colour to these organisms. Citrate Agar is recommended by Subba Rao (5) for the isolation and detection of iron bacteria. A modification of the original formulation of Subba Rao is recommended by APHA (1) for the isolation of heterotrophic iron-precipitating bacteria (2)

METHOD PRINCIPLE

Dipotassium phosphate provides buffering to the medium. Magnesium sulphate, ammonium sulphate and calcium chloride are sources of ions that stimulate metabolism. Ferric ammonium citrate is used as a source of carbon and sodium nitrate acts as a source of nitrogen

MEDIA COMPOSITION

Item	Formula per liter of medium
Ammonium sulphate	0.500 gm
Sodium nitrate	0.500 gm
Magnesium sulphate	0.500 gm
Dipotassium phosphate	0.500 gm
Calcium chloride	0.200 gm
Ferric ammonium citrate	10.00 gm
Agar	15.00 gm

Final pH 6.7 ± 0.2 at 25°C

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
- **S56:** dispose of this material and its container at hazardous or special waste collection point.
- **S57:** use appropriate container to avoid environmental Contamination.

S61: avoid release in environment.

For further information, refer to Citrate Agar material safety data sheet.

STORAGE AND STABILITY

BioScien Citrate Agar dehydrated media are stable until expiration date stated on label when properly stored 10-30°C. The prepared medium should be stored at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

MEDIA PREPARATION

Suspend 27.2 grams in 1000 ml purified/ distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Deterioration

The color of **BioScien** Citrate Agar is Cream to greenish yellow homogeneous free flowing powder. Prepared medium is Light amber coloured, clear to slightly opalescent gel forms in Petri plates. media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

SPECIMEN COLLECTION AND PRESERVATION

Non - Clinical samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile tubes
- Sterile loops
- Incubator

PERFORMANCE CHARACTERISTICS

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

Cultural characteristics observed after an incubation at 30°C for 40–48 hours.

Organism	Growth
Escherichia coli ATCC 25922	Inhibited
Sphaerotilus natans ATCC 13338	Good-uxuriant

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact **BioScien** technical support.

REFERENCES

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
2. Clark F. M., Scott R. M. and Bone E., 1967, Heterotrophic, iron-precipitating bacteria, J. Am. Water Works Assoc., 59: 1036.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
4. 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. 5. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxfordand IBH Publishing Co., New Delhi.

SYMBOLS IN PRODUCT LABELLING		
IVD	For in-vitro diagnostic use	 Number of <n> test in the pack
LOT	Batch Code/Lot number	 Caution
REF	Catalogue Number	 Do not use if package is damaged
	Temperature Limitation	 Consult Instruction for use
	Expiration Date	
	Manufactured by	