

TECHNICAL SHEET

B319	SIMMONS CITRATE AGAR		
Formula			
Ingredients :		gms/lit.	
Magnesium sulphate		0.20	
Ammonium dihydrogen phosphate		1.00	
Dipotassium phosphate		1.00	
Sodium citrate		2.00	
Sodium chloride		5.00	
Bromothymol blue		0.08	
Agar		15.00	
Final pH (at 25°C) :		6.8± 0.2	
Directions :			
Suspend 24.28 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Mix well and distribute in tubes or flasks. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.			
Precaution: Before using water, ensure pH of water is 6.5 to 7.0. Initial colour of the medium may deviate from expected colour, if the above precaution is ignored.			
Principle :			
The ammonium dihydrogen phosphate is the sole source of nitrogen in Simmons Citrate Agar. Magnesium is a cofactor for a variety of metabolic reactions. Phosphate acts as a buffer. Sodium citrate is the sole source of carbon in this medium. Sodium chloride maintains the osmotic balance of the medium. Agar is the solidifying agent. Bromo thymol blue is the pH indicator. Organisms that can utilize ammonium dihydrogen phosphate and sodium citrate as their sole sources of nitrogen and carbon will grow on this medium and produce a colour change from green (neutral) to blue (alkaline).			
QC Tests - (I) Dehydrated Medium			
Colour :		Cream to yellow	
Appearance :		Homogeneous Free Flowing powder	
(II) Rehydrated medium			
pH (post autoclaving/heating) :		6.8 ± 0.2	
Colour (post autoclaving/heating) :		Forest green	
Clarity (post autoclaving/heating) :		Slightly opalescent	
(III) Q.C. Test Microbiological			
Cultural characteristics observed after 18 - 24 hrs.at 35- 37°C.			
MICROORGANISM (ATCC)	GROWTH	COLOUR OF MEDIUM	CITRATE UTILIZATION
Enterobacter aerogenes (13048)	Good - Luxuriant	Blue	+
Salmonella enteritidis (13076)	Good - Luxuriant	Blue	+
Salmonella typhimurium (14028)	Good - Luxuriant	Blue	+
Salmonella typhi (6539)	Fair to good	Green	-
Escherichia coli (25922)	Inhibited	Green	-
Shigella dysenteriae (13313)	Inhibited	Green	-

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Precautions :	1. For Laboratory Use. 2. Follow proper, established laboratory procedures in handling and disposing of infectious materials.				
Limitations :	1. Since the nutritional requirements of organisms vary, some strains may be encountered that fail to grow or grow poorly on this medium. 2. When inoculating a variety of biochemicals, flame the inoculating loop or needle before streaking Simmons Citrate Agar or inoculate Simmons Citrate Agar first to avoid a false positive result. 3. Some citrate positive organisms require 48 hours or longer incubation for a pH change to occur. 4. Before using water, ensure pH of water is 6.5 to 7.0. Initial colour of the medium may deviate from expected colour, if the above precaution is ignored.				
Use:	It is recommended for differentiation the members of Enterobacteriaceae on the basis of citrate utilization from clinical and non clinical samples.				
Storage:	Dehydrated medium- below 30°C Prepared medium- Between 2 to 8°C.				
Packing :	500 gm bottle				
Product profile:	Reconstitution	Quantity on Preparation (500g)	pH (25°C)	Supplement	Sterilization
B319	24.28 G/L	20.593L	6.8 ± 0.2	Nil	121°C / 15 minutes