

## Koser Citrate Broth

Cat. 1200

For the differentiation of *Escherichia coli* and *Enterobacter* on the basis of citrate use.

### Practical information

Applications	Categories
Differentiation	Enterobacteria
Differentiation	<i>Escherichia coli</i>
Industry: Clinical	
Regulations: BAM	



### Principles and uses

Koser Citrate Broth is used to differentiate *Escherichia coli* from the *Enterobacter* group on the basis of citrate use utilization.

It is used in the same way as Simmons Citrate Agar (Cat. 1014), with the advantage of differentiating between coliforms of fecal origin (the majority is citrate-negative) and organisms from dirt that are 90% positive according to Wilson and Miles. These same authors report that only 6,7% of the coliforms isolated from human or animal feces are citrate-positive. *Enterobacter aerogenes* and *Enterobacter cloacae* use sodium citrate as a source of carbon and the inorganic ammonium phosphate salt as a source of nitrogen. *Escherichia coli* cannot use sodium citrate as carbon source and does not grow in this medium. Biochemical identification methods for identifying *E. coli* frequently include Koser citrate. Magnesium sulphate is a magnesium ion required in a large variation of enzymatic reactions, including DNA replication. Monopotassium phosphate is a buffer.

### Formula in g/L

Magnesium sulfate	0,2	Monopotassium phosphate	1
Sodium citrate	3	Sodium ammonium phosphate	1,5

Typical formula g/L \* Adjusted and/or supplemented as required to meet performance criteria.

### Preparation

Suspend 5,7 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into screw-capped tubes and sterilize in autoclave at 121 °C for 15 minutes. Tighten the caps after sterilization.

### Instructions for use

Inoculate and incubate at 35±2 °C for 18-24 hours.

### Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Colorless	6,7±0,2

## Microbiological test

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Incubation conditions: (35±2 °C / 18-24 h).

### Microorganisms

Enterobacter cloacae ATCC 13047  
Klebsiella aerogenes ATCC 13048  
Escherichia coli ATCC 25922

### Specification

Good growth  
Good growth  
Null growth

## Storage

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Temp. Min.:2 °C  
Temp. Max.:25 °C

## Bibliography

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Koser J. Bact. 8:493. 1973. Wilson G.S. and Miles A.A., "Topley and Wilson's Principles of Bacteriology and Immunology", 4th Ed., Edward Arnold Ltd., London, Vol. 1. page 760.