

## Giolitti-Cantoni Broth

For the selective enrichment of *Staphylococcus aureus* in food samples

### Practical information

Applications	Categories
Selective isolation	Staphylococcus

Industry: Food / Dairy products

### Principles and uses

Giolitti-Cantoni Broth with Potassium tellurite added is prepared according to the formula of Giolitti and Cantoni, for the enumeration, using the MPN Method, and for the selective enrichment of coagulase positive staphylococci in foodstuffs and dried baby milk. It was designed by Giolitti and Cantoni to facilitate the growth of *Staphylococcus aureus* by incorporating Sodium pyruvate in the formula, even when present in low numbers in food samples.

The International Dairy Federation recommends this medium in a procedure for detecting *S. aureus* in dairy products, using it as an enrichment medium.

The Tryptone and Beef extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group essential for bacterial growth. Mannitol is the fermentable carbohydrate providing carbon and energy. The growth of Gram-negative bacteria is inhibited by Lithium chloride, whilst the Gram-positive bacilli are inhibited by Glycine and the Potassium tellurite. The high level of Potassium tellurite is necessary to suppress the high numbers of contaminating organisms that could be expected.

### Formula in g/L

Beef extract	5	D-mannitol	20
Glycine	1,2	Sodium chloride	5
Sodium pyruvate	3	Tryptone	10
Yeast extract	5	Lithium chloride	5

### Preparation

Suspend 54,2 grams of medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense 19 ml amounts into test tubes and sterilize in autoclave at 121°C for 15 minutes. Cool to 45-50°C and aseptically add 0.3 ml of 3.5% Potassium Tellurite (Cat. 5208) or 1 ml of 1% Potassium Tellurite to each tube.

### Instructions for use

Duplicate tubes should be inoculated with 1 ml of each serial dilution and the caps tightened. Incubate at 35 ± 2°C for 40 - 48 hours, examining the tubes daily.

The test is considered negative for *S. aureus* if no blackening of the medium is observed. If blackening is present throughout or at the bottom of the tube, subculture to an isolation medium, such as Baird Parker Agar Base (cat. 1100, 1319), and observe for positive growth of black colonies surrounded by a clearing zone.

### Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Toasted	Amber	6,9 ± 0,2

### Microbiological test

Incubation conditions: (35±2 °C / 40-48 h)

## Microrganisms

Micrococcus luteus ATCC 10240  
Escherichia coli ATCC 25922  
Staphylococcus aureus ATCC 25923  
Staphylococcus aureus ATCC 6538

## Specification

Inhibited growth  
Inhibited growth  
Good growth (black)  
Good growth (black)

## Storage

Temp. Min.:2 °C  
Temp. Max.:25 °C

## Bibliography

Giolitti, C. and Cantoni, C. (1966) "A Medium for the Isolation of Staphylococci from Foodstuffs", J. Appl. Bact. 29, 395.  
International Dairy Federation. 1978 IDF Standard GOA: 1978..