

# GIOLITTI-CANTONI Broth (Staphylococcus Enrichment Broth Base acc. to GIOLITTI and CANTONI)

Medium proposed by GIOLITTI and CANTONI (1966) for the enumeration (MPN method) and selective enrichment of staphylococci from foodstuffs.

## General Information

This culture medium complies with the recommendations of the International Organization for Standardization (ISO) (1977), the International Dairy Federation (Internationaler Milchwirtschaftsverband, FIL/IDF) (1990) and the DIN Norm 10178 for the examination of milk.

## Mode of Action

The growth of staphylococci is promoted by pyruvate, glycine and above all by a high concentration of mannitol. Gram-negative contaminants are inhibited by lithium chloride (LAMBIN and GERMAN 1961) while Gram-positive contaminants are inhibited by tellurite. Micrococci are suppressed to a certain degree because of anaerobiosis. Growth of staphylococci can be recognized by a black colouration of the culture medium due to reduction of tellurite to metallic tellurium.

## Typical Composition (g/litre)

Peptone from casein 10.0; meat extract 5.0; yeast extract 5.0; lithium chloride 5.0; D(-)-mannitol 20.0; sodium chloride 5.0; glycine 1.2; sodium pyruvate 3.0; Tween® 80 1.0.

Also to be added:

potassium tellurite trihydrate 0.052 g/litre.

## Preparation

Suspend 55 g/litre. In accordance with the ISO recommendations, dispense 19 ml aliquots into test tubes, autoclave (15 min at 121 °C), cool, add 0.1 ml of a 1 % potassium tellurite solution to each tube.

pH: 6.9 ± 0.2 at 25 °C.

The prepared broth is clear and yellowish-brown.

## Storage

The prepared culture medium base can be stored for about 2 weeks in the refrigerator. The ready-to-use medium must be used the day it is prepared.

## Experimental Procedure and Evaluation

Homogenize the sample material and prepare dilution series (dilution factor 1 in 10). Inoculate each tube containing the broth with a 1 ml aliquot, overlay with sterilized paraffin viscous.

Incubation: 18-24 hours at 35 °C aerobically.

Streak material from tubes that exhibit a black colouration onto selective culture media (e.g. BAIRD-PARKER Agar). When determining the bacterial count by the MPN method, tubes are considered positive for Staphylococcus, if they produce a positive result in the coagulase test.

## Literature

DIN Deutsches Institut für Normung e.V.: Mikrobiologische Milchuntersuchung. Nachweis Koagulase-positiver Staphylokokken. Referenzverfahren für Milchpulver. - DIN 10178.

GIOLITTI, G., a. CANTONI, C.: A medium for the isolation of staphylococci from foodstuffs. - J. Appl. Bacteriol., 29; 395-398 (1966).

Internationaler Milchwirtschaftsverband FIL/IDF: Nachweis Koagulase-positiver Staphylokokken in Milchpulver. - Internationaler Standard 60 A (1990).

International Organization for Standardization: Meat and meat products. - Detection and enumeration of Staphylococcus aureus (Reference methods). - Draft International Standard ISO/DIS 5551 (1977).

LAMBIN, S., et GERMAN, A.: Précis des microbiologie, p. 63, Paris: Masson; 1961.

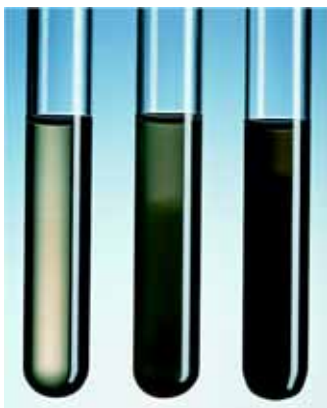
## Ordering Information

Product	Ordering No.	Pack size
GIOLITTI-CANTONI Broth (Staphylococcus Enrichment Broth Base acc. to GIOLITTI and CANTONI)	1.10675.0500	500 g
BAIRD-PARKER Agar	1.05406.0500	500 g
Paraffin viscous	1.07160.1000	1 l
Potassium tellurite trihydrate	1.05164.0100	100 g

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## Quality control

Test strains	Growth	Blackening
Staphylococcus aureus ATCC 25923	good / very good	+
Staphylococcus aureus ATCC 6538	good / very good	+
Staphylococcus epidermis ATCC 12228	poor / good	±
Micrococcus luteus ATCC 10240	none / fair	-
Bacillus cereus ATCC 11778	none / fair	
E. coli ATCC 25922	none / fair	
Pseudomonas aeruginosa ATCC 27853	none	



BAIRD Broth  
 Left tube: Pseudomonas aeruginosa ATCC 27853  
 Middle tube: Staphylococcus epidermidis ATCC 12228  
 Right tube: Staphylococcus aureus ATCC 25923



GIOLITTI-CANTONI Broth  
 Left tube: Pseudomonas aeruginosa ATCC 17853  
 Middle tube: Staphylococcus epidermidis ATCC 12228  
 Right tube: Staphylococcus aureus ATCC 25923