

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.

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 (20 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.

- **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.

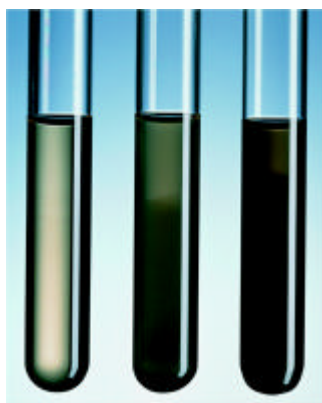
Ordering Information

Product	Merck Cat. 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