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**Giolitti Cantoni Broth Base**

Giolitti Cantoni Broth Base is used for selective enrichment of Staphylococcus aureus from foods

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| REF: V.1/GI01.100 100 Gram  REF: V.1/GI01.500 500 Gram | REF: V.1/GI01.250.0250 250 Gram |

**CLINICAL SIGNIFICANCE**

Giolitti-Cantoni Broth Base is a fluid medium employed for the recovery of low number of Staphylococci from foodstuffs as described by Giolitti and Cantoni (6). Giolitti- Cantoni Broth was also recommended by Mossel et al for detecting Staphylococcus aureus in dried milk, baby food and other food products (1). This medium was recommended as an enrichment medium by the International Dairy Federation (IDF) and APHA for detecting S.aureus in dried milk and other foods stating that the organism should be absent in 1 gram of sample (2,3). ISO committee has also recommended this medium for examination of meat and meat products (4).

**METHOD PRINCIPLE**

# Giolitti-Cantoni Broth Base contains casein enzymic hydrolysate, yeast extract and beef extract as sources of carbon, nitrogen, vitamins and minerals and B-complex vitamins. Mannitol and sodium pyruvate in the basal medium act as growth stimulants for S.aureus . Lithium chloride inhibits gram-negative lactose fermenting bacilli. Potassium tellurite and glycine inhibit gram-positive bacilli (7). Addition of sterile paraffin wax to the inoculated medium inhibits Micrococci due to creation of anaerobic conditions. Potassium tellurite concentration must be reduced as per the weight of test sample (0.1 - 0.01 gram). The medium should be inoculated as soon as it has been cooled after sterilization, otherwise absorbed oxygen should be expelled by placing the tubes in free-flowing steam for 15-20 minutes. Inoculate 1 gram of sample or 1 ml of a suitable dilution of a sample into 19 ml of Giolitti-Cantoni Broth tubes in duplicate. Overlay the medium with 5 ml molten sterile paraffin wax and incubate at 37°C for 24-48 hours and examine daily. Blackening of the medium (usually at the bottom) within 48 hours indicates the presence of S.aureus . The blackened medium, when streaked on Baird Parker Agar (M043), shows black colonies surrounded by clear zones (5).

# MEDIA COMPOSITION

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| **Item** | **Gram per**  **liter of medium** |
| * Casein enzymic hydrolysate * Beef extract * Yeast extract * Mannitol * Sodium chloride * Lithium chloride * Glycerine * Sodium Pyruvate | 10  5  5  20  5  5  1.2  3 |

**PRECAUTIONS AND WARNINGS**

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

* Wearing personnel protective equipment (overall, gloves, glasses,).
* Do not pipette by mouth.
* In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
* Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environmental Contamination.

S61: avoid release in environment.

For further information, refer to the Giolitti Cantoni broth base material safety data sheet.

# STORAGE AND STABILITY

**Lab.Vie**.Giolitti Cantoni broth base dehydrated media are stable until expiration date stated on label when properly stored 10-30°C. The prepared medium should be stored at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

***Final pH 6.9 ± 0.2 at 25°C***

# MEDIA PREPARATION

1. Suspend 54.2 grams in 1000 ml distilled water.
2. Adjust pH to 6.9 ± 0.2 at 25°C
3. Warm gently to dissolve the medium completely.
4. Dispense 19 ml amounts in 20mm x 200mm test tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.
5. Cool rapidly to room temperature and aseptically add 0.3 ml of 3.5% Potassium Tellurite Solution to each tube.
6. Add 0.03 ml for testing meat and meat products. Mix well before use.

Caution: Lithium chloride is harmful. Avoid bodily contact and inhalation of vapours. On contact with skin, wash with plenty of water immediately

**Deterioration**

The color of **Lab.Vie**.Giolitti Cantoni broth base is Light yellow to light green homogeneous free flowing powder. If there are any physical changes, discard the medium.

The hydrated medium is Medium amber colored, clear solution without any precipitate, media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

# SPECIMEN COLLECTION AND PRESERVATION

Non- clinical sample

# EQUIPMENT REQUIRED NOT PROVIDED

* Sterile cups
* Sterile tubes
* Sterile loops
* Incubator

# PERFORMANCE CHARACTERISTICS

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature

# Cultural characteristics observed after an incubation at 30ºC for 40-48 hours.

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| **Test Organisms** | **Growth** | **Tellurite reduction** |
| Staphylococcus aureus ATCC 25923 | Good - Luxuriant | positive, blackening at the bottom of the tubes or general blackening of the medium |
| Escherichia coli ATCC 25922 | Inhibited |  |
| Micrococcus luteus ATCC 10240 | Inhibited |  |
| Staphylococcus aureus ATCC 6538 | Good - Luxuriant | positive, blackening at the bottom of the tubes or general blackening of the medium |
| Bacillus cereus ATCC 11778 | Inhibited |  |
| Pseudomonas aeruginosa ATCC 27853 | Inhibited |  |
| Staphylococcus epidermidis ATCC 12228 | Good - Luxuriant | variable reaction |

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| **SYMBOLS IN PRODUCT LABELLING** | | |
| **IVD** | For in-vitro diagnostic use | Number of <n> test in the pack |
| **LOT** | Batch Code/Lot number | Caution |
| **REF** | Catalogue Number | Do not use if package is damaged |
|  | Temperature Limitation | Consult Instruction for use |
|  | Expiration Date |  |
|  | Manufactured by |  |

# QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact **Lab.Vie**.technical support.

# REFERENCES

1.Mossel D. A. A., Harrewijn G. A. and Elzebroek J. M., 1973, UNICEF.

2. International Dairy Federation, 1978, IDF Standard 60A:1978, International Dairy Federation, Brussels, Belgium.

3. Marshall, (Ed.), Standard Methods for the Microbiological Examination of Dairy Products, 1993, 16th Ed., American Public Health Association, Washington, D.C.

4. International Organization for Standardization (ISO), 1977, Draft ISO/DIS 5551, Part 2.

5. De Waart J., Mossel D. A. A., Ten Broeke R. and Van de Moosdijk A.,1968, J. Appl. Bacteriol., 31:276.

6. Giolitti C. and Cantoni C., 1966, J. Appl. Bacteriol., 29: 395.

7. Lambin S. and German A., 1961, Precis De Microbiologie, pg. 63, Paris Masson.

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