ARENA BioScien

Block 5, Street 9 inside The Ismailia free zone. Ismailia- Egypt
Post Code-41511
Tel.-Fax: +202 21813500/ +202 21813600
Mob.: +2 0121550942/ +2 01119225860
E-mail: sales@arenabioscientific.com
Website: www.arenabioscien.com

Giolitti Cantoni Broth Base

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

REF: BS.1/GI01.100.0100	100 Gram	REF: BS.1/GI01.250.0250	250 Gram
REF: BS.1/GI01.500.0500	500 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

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

BioScien 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 ***BioScien*** 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.

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

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 ***BioScien*** 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.