

BUTI MEDIUM

CAT N°: 1184

For the detection of *Clostridium tyrobutyricum*

FORMULA IN g/l

Tryptic Hydrolyzed of Casein	10.00	Sodium Chloride	8.00
Beef Extract	10.00	Yeast Extract	3.00
Sodium Acetate	10.00	Soluble Starch	1.00

Final pH 6.2 ± 0.2 at 25°C

PREPARATION

Suspend 37 grams of the medium in 900 ml of distilled water. Add 20 ml of a 50% Sodium lactate solution and 0.5 ml of a 37% chlorhidric acid solution. Complete until a volume of 1000 ml with distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes. The prepared medium should be stored at 2-8°C. The color of the prepared medium is amber.

The dehydrated medium should be homogeneous, free-flowing and beige in color. If there are any physical changes, discard the medium.

USES

BUTI MEDIUM is an indicated medium used for the MPN of *Clostridium tyrobutyricum*.

Clostridium tyrobutyricum is a rod-shape, gram-positive bacteria. The spores present in the raw milk, ferments lactic acid in high pH cheeses resulting in the formation of butyric and acetic acid and hydrogen gas under anaerobic conditions. In all cheeses with eyes, undesirable gas formation can occur if large numbers of *C. tyrobutyricum* are active. Their growth usually occurs months after cheese is made and after much proteolysis has occurred. The result is split eyes or newly formed large slits called cracks. Metabolism by *C. tyrobutyricum* also results in rancidity and H₂S formation.

Tryptic Hydrolyzed of Casein and Beef Extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is source of vitamins, particularly the B-group. Sodium Acetate acts as a buffer. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Starch in the medium acts as a growth factor, functioning like a colloid protector and neutralizes toxic products that form during the development of the organisms.

Inoculate and incubate at 37 ± 2°C for 7 days.

MICROBIOLOGICAL TEST

The following results were obtained from type cultures in the performance of the medium after incubation at a temperature of 37 ± 2°C and observed after 7 days.

Microorganisms	Growth	Gas Formation	Inoculum (CFU)	Recovery Rate
<i>Clostridium tyrobutyricum</i> EMD 132	Good	+	10 ³ -10 ⁵	≥ 70
<i>Clostridium perfringens</i> ATCC 10543	Good	-	10 ³ -10 ⁵	≥ 70
<i>Staphylococcus aureus</i> ATCC 25923	Moderate	-	10 ³ -10 ⁵	≥ 50
<i>Pseudomonas aeruginosa</i> ATCC 27853	Null	-	≥ 10 ⁵	≤ 0.01

BIBLIOGRAPHY

Klijn N, Nieuwendorf FFJ, Hoolwerf JD, van der Waals CB, Weerkamp AH. Identification of *Clostridium tyrobutyricum* as the causative agent of late blowing in cheese by species-species PCR amplification. Appl Environ Microbiol 61:2919, 1995.

Marth, E.H & Steele, J.L Applied Dairy Microbiology. 2nd Edition

STORAGE

Once opened keep powdered medium closed to avoid hydration.

