

TM 683 – BRYANT AND BURKEY MEDIUM

INTENDED USE

For detection and enumeration of spores of lactate fermenting *Clostridium* in dairy products.

PRODUCT SUMMARY AND EXPLANATION

Bryant and Burkey Medium is used to enumerate the spores of gasogenic clostridia that are responsible for swelling of cheese in dairy industry. In normal conditions of use, the medium allows the growth of other microorganisms also which are not directly related to cheese alteration, e.g. *Clostridium sporogenes* or *Clostridium butyricum*. Germination and growth of butyric acid bacteria (BAB) causes severe defects in cheese with silage being the main source of BAB spores in cheese milk. Clostridia spores are heat resistant and therefore can contaminate cheese brines. The gas produced by the growth of clostridia swells the cheese and is responsible for defect known as butyric swelling, resulting in bad taste. The main species causing this butyric swelling defect is *Clostridium tyrobutyrium*. Recommended technique for estimation of *Clostridium* is to enumerate the spores by the MPN method.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	15.000
Yeast extract	5.000
Beef extract	7.500
Sodium acetate	5.000
L-Cystine dihydrochloride	0.500
Resazurin	0.0025

PRINCIPLE

Resazurin is a redox indicator and monitors the oxygen level turning from pink under aerobic conditions to colourless under anaerobic conditions. The nutrient composition of the basal medium, particularly of tryptone, yeast extract, beef extract and L-cysteine HCl help in rapid growth of *Clostridium* species. Sodium acetate promotes spore germination and improves the selectivity of the medium. Sodium lactate is fermented under anaerobic conditions by *Clostridium tyrobutyricum*. A pink colour indicates the presence of oxygen in the media which turns colourless on boiling.

INSTRUCTION FOR USE

- Dissolve 33.0 grams in 1000 ml purified/distilled water containing 5 grams of Sodium lactate.
- Heat if necessary to dissolve the medium completely.
- Mix well and dispense into tubes or flasks as desired.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium	: Light amber coloured, clear solution when hot, becomes pink-red upon cooling.
pH (at 25°C)	: 5.9±0.2

INTERPRETATION

Cultural characteristics observed after incubation.



Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Gas production	Incubation Temperature	Incubation Period
<i>Clostridium tyrobutyricum</i>	25755	50-100	Good	Positive	35-37°C	6 Days

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.










Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

- Bergeres J. L. and Sivela S., 1989, Detection and enumeration of Clostridial spores related to cheese quality-Classical and new methods, FIL-IDF Bull. 51:18-23.
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- Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
- Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
- Touraille C. and Bergere J. L., 1974, Biochimie, 56: 404-422.
- Vissers M. M. M., Drichuis F., Giffel T., John P. D., Lankveld J. M. G., 2007, J. Dairy Sci., 90:928

 GMP Good Manufacturing Practices Certified	 Best Before	 QTY. Quantity	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 LOT/ B. NO. Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*For Lab Use Only
Revision: 08 Nov., 2019