

Technical Information

Peptone Sorbitol Bile Broth

Product Code: DM 2231

Application: - Peptone Sorbitol Bile Broth is used for identification of *Yersinia enterocolitica* from dairy products.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	5.000
Sorbitol	10.000
Disodium phosphate	8.230
Monosodium phosphate	1.200
Bile salt mixture	1.500
Sodium chloride	5.000
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Swine are recognized as major reservoirs of *Y. enterocolitica* in nature ⁽¹⁾. These bacteria are capable to grow at refrigeration temperatures ⁽²⁾. Method to prevent post pasteurization contamination must be taken to prevent the post pasteurization contamination of finished dairy products due to proliferation of *Y. enterocolitica*. Peptone Sorbitol Bile Broth is formulated as per APHA ⁽³⁾ for the identification of *Y. enterocolitica* from dairy products.

Peptone Sorbitol Bile Broth contains peptic digest of animal tissue which provides nitrogenous growth factors and other ingredients for the growth of *Y. enterocolitica*. Sorbitol is a polyhydric alcohol (reduced product of glucose) and an important substrate in biochemical characterization tests for *Yersinia*. *Y. enterocolitica* can degrade sorbitol while *Yersinia pestis* and *Yersinia pseudotuberculosis* fail to do so ⁽³⁾. Phosphates maintain the buffering action of the medium while bile salt mixture inhibit majority of the gram-positive organisms. The pH of the medium is slightly alkaline as *Yersinia* species are tolerant to dilute alkali ⁽⁴⁾.

Inoculate 25 grams of food samples into 225 ml of Peptone Sorbitol Bile Broth (DM2231). Incubate at 10°C for 10 days. After incubation, spread 0.1 ml onto *Yersinia* Selective Agar Base (DM1843). Presumptive *Yersinia* colonies are confirmed by appropriate biochemical test.

Methodology

Suspend 30.93 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely.

Dispense 100 ml into Wheaton bottles. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured clear solution without any precipitate

Reaction

Reaction of 3.09% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH Range 7.40-7.80

Cultural Response/ characteristics

DM 2231: Cultural characteristics observed after an incubation at 10°C for 10 days.



Dehydrated Culture Media
Bases / Media Supplements

Organism	Inoculum (CFU)	Growth	Sorbitol utilization
Yersinia enterocolitica ATCC 27729	50-100	luxuriant	positive reaction
Yersinia pseudotuberculosis ATCC 29833	50-100	good- luxuriant	negative reaction

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Doyle M.P., Hugdahl M.B., Taylor S. L., 1981, Appl. Environ. Microbiol. 42:661-666
2. Francis D. W., Spaulding P.L., Lovett J., 1980, Appl. Environ. Microbiol. 40:174-176
3. Wehr H.M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
4. Aulisio C. C. G., Mehlman I.J. and Sanders A. C., 1980, Appl. Environ. Microbiol., 39:135.

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