

Technical Information

Yeast Extract Rose Bengal Broth Base

Product Code: DM 1955

Application: - Yeast Extract Rose Bengal Broth is used for the cold enrichment, for the recovery of *Yersinia enterocolitica* and *Yersinia pseudotuberculosis* from food samples.

Composition**

Ingredients	Gms / Litre
Yeast extract	5.000
Disodium phosphate	17.250
Bile salts	2.000
Sodium chloride	1.000
Magnesium sulphate	0.010
Sodium pyruvate	1.000
Rose bengal	0.040
Final pH (at 25°C)	7.9±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Yersinioses are zoonotic infections that usually affect rodents, small animals and birds, while humans are accidental hosts. *Yersinia enterocolitica* is a significant invasive enteric pathogen responsible for well-recognized diseases, especially in younger persons, and associated with several uncommon post-infection syndromes ⁽¹⁾. On the other hand *Yersinia pseudotuberculosis* causes a zoonotic disease with its natural reservoir being rodents, wild animals and game birds ⁽²⁾. Yeast Extract Rose Bengal Broth is formulated as recommended by APHA for enrichment of *Yersinia* species from foods ⁽³⁾, using the cold enrichment method. For this *Y. enterocolitica* and *Y. pseudotuberculosis* are grown at 4°C, Primary enrichment is carried out in this medium for 9 days at 4°C or 3 days at 10°C ⁽⁴⁾. From this enrichment the organisms are further enriched in secondary selective enrichment medium such as PSTA Broth (DM 1940) and then isolated by streaking onto selective plating media such as Yersinia Selective Agar (DM1843), SS Agar (DM1108) and MacConkey Agar (DM1082).

Yersinia species are psychrotropic and therefore grow at 4°C. Yeast extract provides essential nutrients. Bile salts inhibit gram-positive organisms. Various salts help in cold enrichment of *Yersinia* species.

Methodology

Suspend 26.3 grams of powder media in 900 ml distilled water. Shake well and Heat if necessary, to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 20-25°C and aseptically add 100 ml of 4% filter sterilized sorbose solution. Mix well and dispense aseptically as desired.

Quality Control

Physical Appearance

Light yellow to pink homogeneous free flowing powder

Colour and Clarity of prepared medium

Reddish pink coloured clear solution without any precipitate.

Reaction

Reaction of the medium (2.63% w/v 90ml Base + 10 ml of 4% w/v sorbose) at 25°C. pH : 7.9±0.2

pH Range 7.70-8.10

Cultural Response

DM 1955: Cultural characteristics observed after incubation at 4°C for 9-10 days or at 10°C for 3 days with added sorbose solution.

Organism	Inoculum (CFU)	Growth
<i>Yersinia enterocolitica</i> ATCC 27729	50-100	Good-Luxuriant
<i>Yersinia pseudotuberculosis</i> ATCC 29833	50-100	Good-Luxuriant

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. Cover T. L. and Aber R. C., 1989, N. Engl. J. Med. 321:16-24
2. Murray P. R., Baron J. H., Pfaller M. A., Tenover J. C. and Tenover F. C., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
3. Speck M. L., (Ed.), 1984, Compendium of Methods for the Microbiological Examination of Foods, 2nd Ed., APHA, Washington, D.C.
4. Schiemann D. A., 1982, Appl. Environ. Microbiol., 43:14.

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