Yersinia Enrichment Broth Base (DM1451)

Intended Use

Yersinia Enrichment Broth Base (DM1451) is recommended for enrichment of *Yersinia* species, particularly *Yersinia enterocolitica* from human and animal intestinal contents.

Product Summary and Explanation

Yersinia Enrichment Broth Base is recommended as an enrichment broth for *Yersinia* species, particularly *Yersinia enterocolitica* which is a causative agent of gastroenteritis. The diagnosis is confirmed by direct isolation of the organisms on solid medium from enrichment broth. *Yersinia enterocolitica* and related species *Yersinia intermedia*, *Yersinia frederikseni* and *Yersinia kristenseni* constitute a heterologous group of organisms, some of which are parasites and potential pathogens of humans and animals, while others are apparently saprophytic and free living in water, soil and vegetation.[1] In humans *Y. enterocolitica* has been isolated with a variety of clinical symptoms ranging from mild gastroenteritis, appendicitis and terminal ileitis. Human infections probably occur from ingestion of contaminated food products or animal contact. Family and other small outbreaks suggest that person to person transmission occurs.[2] Acid foods and fermented products should be analyzed promptly, as *Yersinia* is relatively sensitive to acidic conditions. The most efficient procedure for recovering enteropathogenic bacteria from foods incorporates at least one and often two enrichment steps before plating onto selective differential agar media.

Principles of the Procedure

Yersinia Enrichment Broth Base contains yeast extract supply essential vitamins and casein enzymic hydrolysate which provides carbon, nitrogen and necessary nutrients for growth of *Yersinia*. Disodium hydrogen phosphate acts as buffer salt. Malachite green in the medium inhibits other contaminating bacteria.

Formula / Liter

Ingredients	Gms / Liter
Casein peptone	10.00
Yeast extract	1.00
Disodium hydrogen phosphate	2.00
Malachite green	0.013
Final pH: 5.8 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 13.01 grams of the medium in one liter of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. Mix well and dispense as desired.

Quality Control Specifications

Dehydrated Appearance	Light yellow to light blue homogeneous free flowing powder
Prepared Medium	Greenish blue coloured clear to slightly opalescent solution with a slight precipitate
Reaction of 1.3% Solution	pH : 5.8 ± 0.2 at 25°C
Gel Strength	Not Applicable

Expected Cultural Response: Cultural characteristics observed after an incubation at 25- 30°C for 24-48 hours.

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	*Escherichia coli ATCC 25922*	>=10^3	inhibited
2.	*Yersinia enterocolitica ATCC 27729*	50-100	good-luxuriant

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

1. Refer appropriate references for standard test procedures.
2. For enrichment of *Y. enterocolitica*, prepare 1:10 homogenate of the food sample by weighing 25 grams of food and adding it to 225 ml of primary enrichment medium.
3. Transfer the homogenate carefully from the blender up to a sterile jar or flasks for incubation.
4. After incubation, inoculate at a ratio of 1:100, in selective enrichment broth (Yersinia Enrichment Broth Base).
5. Incubate at 25°C and streak onto a plating agar such as CIN Agar (Yersinia Selective Agar Base) after 3 and 5 days.

Results

Refer appropriate references and procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Yersinia Enrichment Broth Base
Product Code : DM1451
Available Pack sizes : 500gm

References

1. Collee J. G., Duguid J. P., Fraser A. G., Marmion B. P., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1989, 13th Edition, Churchill Livingstone.
2. Wauters G., 1973: Med. Mald. Infect. 3 :437.

Further Information

For further information please contact your local MICROMASTER Representative.

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