Technical Information

Yersinia Identification Broth Base

Product Code: DM 2221

Application: - Yersinia Identification Broth Base with addition of Urea is recommended for identification of *Yersinia.*

Composition**

Ingredients	Gms / Litre
L-Tryptophan	3.000
Monopotassium phosphate	1.000
Dipotassium phosphate	1.000
Sodium chloride	5.000
Phenol red	0.025
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

There are three species of *Yersinia* with unquestionable pathogenicity for humans: *Yersinia pestis, Yersinia psuedotuberculosis* and *Yersinia enterocolitica* . Among these, *Y.enterocolitica* is usually associated with foodborne gastroenteritis. It is the most common species of *Yersinia* isolated from clinical specimens. The portal of entry in humans is the oral digestive route, with infection taking place in the terminal ileum [(1)]. Yersinia Identification Broth Base is recommended for the identification of *Yersinia* by the ISO Committee [(2)].

L-Tryptophan serves as a base to test indole production. Phosphates buffer the medium while sodium chloride maintains the osmotic equilibrium of the medium. Phenol red is the pH indicator dye. Urea (MS2048) is broken down by enzyme urease to yield ammonia. Ammonia increases the pH of the medium towards alkalinity, consequently making the phenol red indicator dye to change from a orange-red to a pink-violet colour.

Inoculate the test sample in PSB Broth (MS1941) and ITC Broth (MS2220) for enrichment. After incubation at 25°C for 2-3 days, inoculate onto Yersinia Selective Agar Base (MS1843). Presumptive *Yersinia* colonies are confirmed biochemically by inoculating into Yersinia Identification Broth Base (MS2221) [(2)].

Methodology

Suspend 10.02 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and aseptically add Urea solution (MS2048). Mix well before dispensing in sterile tubes.

Quality Control

Physical Appearance
Light yellow to light pink homogeneous free flowing powder

Colour and Clarity of prepared medium
Orange-red coloured clear solution without any precipitate.

Reaction
Reaction of 1.0% w/v aqueous solution at 25°C. pH : 6.9±0.2
pH range: 6.70-7.10

Cultural Response/Characteristics
DM 2221: Cultural characteristics observed, after an incubation at 30-32°C for 18-24 hours with added Urea solution (MS2048).

Organism	Inoculum (CFU)	Growth	Urease production	Colour change of medium
Yersinia enterocolitica ATCC 27729	50-100	luxuriant	positive reaction	Orange-red to cerise

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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C., Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4th Ed., J. B. Lippinccott Company.
2. International organization for standardization, (ISO), 1994, Draft ISO 10273.

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