MRSA ENRICHMENT BROTH

- For in vitro use only - Catalogue No. TT89

Our MRSA Enrichment Broth is a selective enrichment medium used in the surveillance of clinical specimens for Methicillin-resistant *Staphylococcus aureus* (MRSA).

Several studies in the late 1980's reported an increased sensitivity in detecting MRSA when a broth culture was used alongside a plated medium. A 2001 blinded study by Gardam et al. confirmed these findings. The researchers reported a significant increase (19% and 32%) in the number of positive MRSA events when specimens were first inoculated into a modified TSB broth and subcultured versus direct inoculation of the specimens onto a selective plated medium alone. The increased sensitivity of this method makes the detection of MRSA more accurate, and subsequently helps in its surveillance and control.

MRSA Enrichment Broth contains a high sodium chloride level, which suppresses the growth of most commensal bacteria other than *Staphylococcus* species; the higher salt concentration has also been reported to be beneficial in recovering resistant organisms. The MRSA Enrichment Broth serves as an enrichment step for resistant organisms and after incubation must be subcultured onto an appropriate selective medium, such as Mannitol Salt Agar with Oxacillin (Dalynn PM31-33), to isolate potential MRSA colonies.

Formula per Litre of Medium

Pancreatic Digest of Casein	17.0 g
Papaic Digest of Soybean Meal	3.0 g
Dipotassium Phosphate	2.5 g
Dextrose	2.5 g
D-Mannitol	10.0 g
Sodium Chloride	75.0 g
Yeast Extract	2.5 g

pH 7.3 ± 0.2

Recommended Procedure

1. Allow medium to reach room temperature.
2. Using an inoculum from the specimen, inoculate the MRSA Enrichment Broth. If the specimen is contained on a swab, cut or break the swab off into the broth.
3. Incubate aerobically at 35°C for 24 hours.
4. After the incubation period, shake the tube slightly to ensure a homogenous suspension and subculture onto an appropriate selective agar. Incubate plates according to manufacturers recommendations.

Interpretation of Results

MRSA Enrichment Broth is only an enrichment step therefore all inoculated tubes must be subcultured onto an appropriate selective medium after the incubation period regardless of turbidity.

Additional biochemical, serological, and susceptibility tests may be required to fully evaluate MRSA isolates.

Quality Control

After checking for correct pH, colour, depth, and sterility, the following organisms are used to determine the growth performance of the completed medium.

Organism	Expected Results
Staphylococcus aureus ATCC 43300 (MRSA)	Turbid
Streptococcus bovis ATCC 9809	Inhibition

Storage and Shelf Life

Our MRSA Enrichment Broth should be stored in an upright position at 4°C to 8°C. Under these conditions the medium has a shelf life of 26 weeks from the date of manufacture.

References

1. Chapman GH. The significance of sodium chloride in studies of staphylococci. J Bacteriol 1945; 50:201.
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5. Van Enk RA, Thompson KD. Use of a primary isolation medium for recovery of methicillin-resistant *Staphylococcus aureus*. J Clin Micro 1992; 30:504-505.
6. Van Ogtrop ML. Effect of broth enrichment cultures on ability to detect carriage of *Staphylococcus aureus*. Antimicrobial Ag Chemther 1995; 39:2169.
7. Kampf G, Weist K, Swindsinski S, Kegel M, Ruden H. Comparison of screening methods to identify methicillin-resistant *Staphylococcus aureus*. Eur J Micro Infect Dis 1997; 16:301-7.
8. Gardam MG, Brunton J, Willey B, McGreer A, Low D, Conly J. A blinded comparison of three laboratory protocols for the identification of patients colonized with methicillin-resistant *Staphylococcus aureus*. Infect Control Hosp Epidemiol 2001; 22:152-6.

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