



1- INTENDED USE

MRSA Select is a selective chromogenic medium for the isolation and direct identification of Methicillin-resistant *Staphylococcus aureus* (MRSA). This medium is particularly adapted for MRSA screening from samples such as nasal swabs.

2- PRINCIPLE

The selectivity of this medium is based on the presence of a high salt concentration and an antibiotic-antifungal mixture that inhibits the majority of microbes, with the exception of Methicillin-resistant staphylococci.

Identification is based on the demonstration of a specific enzymatic activity of *Staphylococcus aureus*: cleavage of a chromogenic substrate, leading to a strong pink coloration of the *Staphylococcus aureus* colonies.

- Methicillin-resistant *Staphylococcus aureus* (MRSA): little pink colonies
- Methicillin-resistant coagulase negative staphylococci (MRCNS): little white colonies (possibly tinged with pink)
- Methicillin sensitive staphylococci (MSS): no growth

3- PRESENTATION

Ready to use medium:

Pack of 20 Petri dishes (90 mm)
(abbreviation: **MRSA**) Code 63747

4- COMPOSITION

MRSA Select is a selective medium for the isolation of MRSA, composed of:

- an optimised base for the growth of staphylococci,
- an antibiotic-antifungal mixture and a high salt concentration, which inhibits the growth of yeasts, the majority of Gram- and Gram+ bacteria, and thus methicillin-sensitive staphylococci,
- a chromogenic substrate enabling the direct identification of *Staphylococcus aureus*.

5- STORAGE

Ready-to-use medium: at +2 – 8°C, **protected from light**.

The expiry date and batch number are indicated on the packaging.



6- INSTRUCTIONS

Material

Material supplied: **MRSA Select** medium

Inoculation :

From specimen

• Direct:

Inoculate by streaking directly from the sample to be examined (nasal swab...).

• Indirect

Place the sample (swab) in suspension in 1 ml of broth (or sterile saline). Inoculate by streaking 50 µl of this suspension.

From isolated colony :

Prepare a colony suspension to obtain 0.5 McFarland turbidity. Using a 1µl loop spot an area 10 to 15 mm in diameter with this suspension.

Incubation:

Incubate for 18 to 24 hours at 37 °C.

Reading - Interpretation:

- Little pink colonies: MRSA.
- White colonies (possibly tinged with pink) : Lack of MRSA (strongly suggestive of coagulase negative Methicillin resistant staphylococci).

COMMENTS

If there is any doubt over the identification, direct confirmation can be obtained from the isolated colonies using an agglutination test (Pastorex Staph +: code 56356; 56353).

Interpretation of the test results should be made taking into consideration the patient's history, the source of the specimen, colonial and microscopic morphology and, if necessary, the results of any other tests performed.

7- DIAGNOSTIC SENSITIVITY AND SPECIFICITY

A prospective clinical study was carried out on 648 samples from patients at high risk of carrying MRSA (86 samples were identified and confirmed as being MRSA positive).

This study demonstrated that **MRSA Select** had an MRSA detection sensitivity of **98.9%** and a specificity of **99.8%** after an incubation period of **24 hours**.

8- QUALITY CONTROL OF THE TEST

Appearance of the medium : opaque white agar

Strains	Result of culture at 37+/- 2°C for 18-24h
<i>Staphylococcus aureus</i> ATCC 49476	Pink colonies
<i>Staphylococcus aureus</i> ATCC 43300	Pink colonies
<i>Staphylococcus aureus</i> ATCC 25923	Inhibition

9- QUALITY CONTROL OF THE MANUFACTURER

All manufactured reagents are prepared according to our Quality System, starting from reception of raw material to the final commercialization of the product. Each lot is submitted to quality control assessments and is only released to the market, after conforming to pre-defined acceptance criteria. The records relating to production and control of each single lot are kept within Bio-Rad.

10- LIMITATIONS OF USE

- Very rare slow-growth MRSA strains require over 24 hours to develop pink colonies. However, since the medium's performances are optimized for reading at 24 hours, it is recommended to confirm the identification of colonies showing late coloring (if incubation is extended after 28 hours).
- If it is necessary to defer the interpretation of a 24-hour culture, store the plates at +2-8°C protected from light.
- It is possible that rare strains of *Staphylococcus epidermidis* will develop a faint pink coloration. However, the intensity of their coloration enables them to be differentiated from MRSA.
- It is possible that certain strains of *Acinetobacter* will develop a dark pink coloration. However, their domed and mucoid appearance enables them to be differentiated from MRSA.



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