

# ORSAB Selective Supplement

## PRODUCT INFORMATION

P007-1MU - Polymyxin B Sulfate, Powder, 1MU

P007-10MU - Polymyxin B Sulfate, Powder, 10MU

P007-100MU - Polymyxin B Sulfate, Powder, 100MU

O006-1g - Oxacillin Sodium, Powder, 1g

O006-5g - Oxacillin Sodium, Powder, 5g

## DESCRIPTION

Oxacillin Resistance Screening Agar Base with ORSAB Selective Supplement is a medium for screening for methicillin resistant *Staphylococcus aureus* (MRSA) directly from routine swab samples.

## BACKGROUND

Polymyxin B is an antibiotic primarily used for resistant gram-negative infections. It is derived from the bacterium *Bacillus polymyxa*. Polymyxin B is a mixture of two closely related compounds, polymyxin B1 and polymyxin B2. It has a bactericidal action against almost all gram-negative bacilli except the *Proteus* group.

Oxacillin sodium is a narrow spectrum beta-lactam antibiotic of the penicillin class.

### Mechanism of action

Polymyxins bind to the cell membrane and alter its structure, making it more permeable. The resulting water uptake leads to cell death.

## APPLICATION IN OXACILLIN RESISTANCE SCREENING AGAR BASE

ORSAB is intended as a medium for the screening for methicillin resistant *Staphylococcus aureus* (MRSA) directly from routine swab samples. The screening of patients and staff for the early detection of MRSA colonisation is essential if epidemics are to be prevented. ORSAB is based on traditional Mannitol Salt Agar with a reduction in salt concentration from 75 g/l (7.5%) to 55 g/l (5.5%). This lower level of salt is still sufficient to

inhibit most bacteria other than staphylococci whilst optimising growth of low numbers of MRSA.

Oxacillin Resistance Screening Agar Base is a nutritious and selective medium containing peptones for growth, a high salt concentration and lithium chloride to suppress non-staphylococcal growth with mannitol and aniline blue for the detection of mannitol fermentation.

The antibiotics contained in ORSAB Selective Supplement are oxacillin at 2 mg/litre to inhibit methicillin sensitive *Staphylococcus aureus* (MSSA) and polymyxin B for the suppression of other bacteria able to grow at such a high salt concentration, e.g. *Proteus* spp.

Typical colonies of MRSA are intense blue in colour on a colourless background enabling the organism to be more easily identified in mixed culture than the pale yellow colonies seen on Mannitol Salt Agar.

Culture Medium	Colony Colour	
	Positive	Negative
ORSAB	Intense blue on colourless media	Straw / No Growth
Mannitol Salt Agar	Pale yellow on red media	Pink-Red / No Growth

## Content concentrations

Typical Formula*	mg/litre
<b>Oxacillin Resistance Screening Agar Base</b>	
Peptone	11.8
Yeast Extract	9
Mannitol	10
Sodium chloride	55
Lithium chloride	5
Aniline Blue	0.2
Agar	12.5
Final pH 7.2 ± 0.2 @ 25°C	
<b>ORSAB Selective Supplement</b>	
<a href="#">Polymyxin B</a>	50,000 IU (≈ 6 mg)
<a href="#">Oxacillin</a>	2

\* Adjusted as required to meet performance standards

Table 1 - Typical Formula for Oxacillin Resistance Screening Agar Base and ORSAB Selective Supplement

## METHOD

### Preparation

Suspend appropriate amount of Oxacillin Resistance Screening Agar Base in distilled water and bring

gently to the boil to dissolve. Sterilise by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of ORSAB Selective Supplement, reconstituted as directed below. Mix well and pour into sterile Petri dishes.

## Protocol

Take a routine swab sample from the patient or person to be screened. Rub the swab onto an ORSAB plate in one set of streaks near the plate perimeter. The sample material should then be streaked across the plate using the diminishing sweep technique. Incubate at 37°C for 24 hours.

Examine after 24 hours for blue colonies. Confirm suspected MRSA with coagulase test. Re-incubate negative plates for a further 24 hours if necessary. Do not re-incubate positive plates.

## Quality control

Positive control:

*Staphylococcus aureus* (MRSA strain) ATCC® 43300:  
Good growth; blue coloured colonies

Negative control:

*Staphylococcus aureus* (MSSA strain) ATCC® 25923:  
No growth

*Escherichia coli* ATCC® 25922: No growth

## REFERENCES

