TM 1561 - MeReSA AGAR BASE

INTENDED USE

For selective isolation and identification of methicillin resistant *Staphylococcus aureus* from clinical specimens.

PRODUCT SUMMARY AND EXPLANATION

Staphylococcus aureus sometimes referred to as "Staph" is a common bacterium found on the skin of healthy people. It is responsible for infections ranging from superficial to systemic. *Staphylococcus aureus* resistant to the antibiotic methicillin are referred to as Methicillin Resistant *Staphylococcus aureus* (MRSA). Initially staphylococcal infections were treated using penicillin. But over the years, resistance to penicillin developed, so methicillin was the next drug of choice. Unfortunately, certain strains (MRSA) have now developed resistance to methicillin also. Patients with breaks in their skin due to wounds, indwelling catheters or burns are those with certain risk of developing MRSA infection. Symptoms in serious cases may include fever, lethargy and headache. MRSA can cause UTI, pneumonia, toxic shock syndrome and even death. Spread of MRSA infections can be controlled to a great extent by maintaining personal hygiene after interaction with an MRSA infected person.

Methicillin-resistant strains of *Staphylococcus aureus* (MRSA) were recognized in 1980s as a major clinical and epidemiological problem. MRSA strains were heterogeneous in their expression of resistance to b-lactam agents, in that large differences in the degree of resistance were seen among the individual cells in a population. The basis of methicillin-resistance is the production of an additional penicillin-binding protein mediated by the mec A gene, an additional gene found in methicillin- resistant Staphylococci. MeReSa Agar Base was developed to detect the presence of the mec A gene in *S. aureus* i.e. methicillin-resistant *S. aureus.*

COMPOSITION

Ingredients	Gms / Ltr
Casein enzymic hydrolysate	10.000
Beef extract	5.000
Glycine	10.000
Sodium pyruvate	10.000
Lithium chloride	5.000
Mannitol	10.000
Sodium chloride	10.000
Indicator mixture	0.130
Agar	20.000

PRINCIPLE

Casein enzymic hydrolysate and meat extract B provide nitrogenous compounds. Lithium chloride and methicillin inhibit most of the contaminating microflora except methicillin-resistant *S. aureus* (MRSA). Glycine and sodium pyruvate enhance the growth of *Staphylococcus* species. Colour of the colonies is due to the indicator mixture and mannitol used in the medium. Sodium chloride maintains the osmotic equilibrium of the medium as well as supports the growth of *Staphylococcus* species.

INSTRUCTION FOR USE

- Dissolve 40.06 grams in 500 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool to 45-50°C and aseptically add sterile rehydrated contents of 1 vial of MeReSa Selective Supplement and

Cefoxitin supplement both in combination for more selectivity.

- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder
Appearance of prepared medium : Pale pink coloured clear to slightly opalescent gel forms in Petri plates
pH (at 25°C) : 7.1±0.2

INTERPRETATION

Cultural characteristics observed with added MeReSa Selective Supplement and Cefoxitin Supplement both in combination after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth w/ MeReSa Selective and Cefoxitin Supplement	Recovery w/ MeReSa Selective and Cefoxitin Supplement	Colour of Colony	Incubation Temperature	Incubation Period
Escherichia coli	*25922*	>=10^3	inhibited	0%	-	35-37°C	18-48 Hours
Staphylococcus aureus	*25923*	>=10^3	inhibited	0%	-	35-37°C	18-48 Hours
Staphylococcus aureus	*43300*	50-100	good-luxuriant	>=50 %	light pink	35-37°C	18-48 Hours
Staphylococcus epidermidis	*12228*	>=10^3	inhibited	0%	-	35-37°C	18-48 Hours
Staphylococcus gallinarum	*2992*	>=10^3	inhibited	0%	-	35-37°C	18-48 Hours
Staphylococcus saprophyticus	*15305*	>=10^3	inhibited	0%	-	35-37°C	18-48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

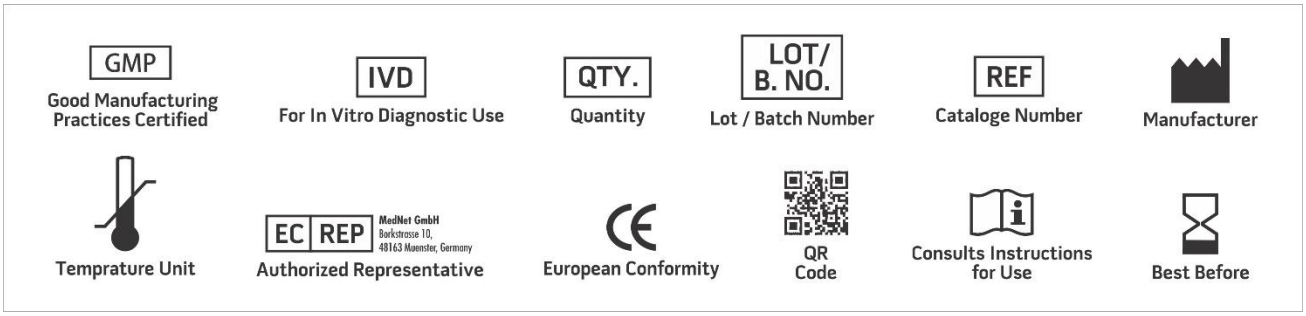
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Doyle, Beuchat and Montville, (Eds.), 1997, Food Microbiology Fundamentals and Frontiers. American Society for Microbiology, Washington, D.C.
2. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
3. Methicillin Resistant Staphylococcus aureus, Copyright © 1997-2005, Canadian Centre for Occupational Health and Safety, Sept 19th, 2005.
4. Dr. Alan Johnson, Methicillin resistant Staphylococcus aureus (MRSA) infection, The support group for MRSA sufferers and Dependents, AUG 1st, 2005.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

Revision: 08 Nov., 2019