CM 20489 – COAGULASE MANNITOL AGAR BASE

INTENDED USE

For isolation and differentiation of pathogenic staphylococci from clinical specimens.

PRODUCT SUMMARY AND EXPLANATION

Thegenus Staphylococcus comprises 28 accepted or proposed species, 14 of which may be encountered in human clinical specimens. Staphylococci are generally found on the skin and mucous membranes of humans and other animals. Some of the pathogenic staphylococci in both humans and animals produce an enzyme called coagulase and detection of this enzyme is used in the laboratory to identify these organisms.

These media are used for the isolation of Staphylococcus aureus from clinical specimens and for differentiation of S.aureus from other species on the basis of coagulase production and mannitol fermentation. Chapman for the first time introduced a medium for selective isolation and differentiation of Staphylococci. Tellurite-glycine media were designed by Zebovitz et al and Marwin for selectively isolating coagulase-positive Staphylococcal species. Present medium is based on Esber and Faulconer formulation. Mutant or old cultures of S.aureus may be weak coagulase producers. They should be freshly sub cultured and rechecked. Escherichia coli ferments mannitol and may be weakly coagulase positive. Coagulase production is dependent on the presence of a fermentable sugar like mannitol in this case. It is also dependent on the presence of a protein factor in the HI infusion and blood plasma. When mannitol is fermented, the pH of the medium surrounding the coagulase positive colonies drops. This drop in pH is indicated by the change in colour of the bromocresol purple indicator, which turns yellow and exhibits yellow zones around the colonies.

An opaque area of coagulated plasma forms around the colonies of coagulase positive organisms. Staphylococcus epidermidis is coagulase negative and mannitol non-fermenting species, which does not change the colour of the medium. Coagulase negative species may ferment mannitol and produce a yellow zone around the colonies but an opaque zone will not be formed.

COMPOSITION

Ingredients	Gms / Ltr
Beef heart infusion	5.000
Tryptone	10.500
Soya peptone	3.500
Sodium chloride	3.500
Mannitol	10.000
Bromo cresol purple	0.020
Agar	14.500

PRINCIPLE

Beefheartinfusion, soya peptone and tryptone provides nutrients to the media. Mannitol acts as a ermentable sugar. Sodium chloride helps in maintaining equilibrium. Agar acts as a solidifying agent.

INSTRUCTION FOR USE

Dissolve 47.02 gramsin 1000 ml purified/distilled water.
Heat to boiling to dissolve the medium completely.
Sterilize by autoclaving at 118 - 121°C (12-15 psi pressure respectively) for 15 minutes.
Cool to 45 - 50°C. Add 7 - 15% v/v sterile, pretested, rabbit plasma the basal medium.
Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Light yellow to light grey homogeneous free flowing powder.
Appearance of prepared medium	: Purple coloured, slightly opalescent gel forms in Petri plates.
pH (at 25°C)	: 7.4±0.2

INTERPRETATION

Culturalcharacteristics observed after incubation with added 7-15% v/v sterile pretested, rabbit plasma.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Mannitol fermentation	Coagulase production	Incubation Temperature	Incubation Period
Staphylococcus epidermidis	12228	50-100	Luxuriant	>=70%	Negative reaction, purple colour	Negative reaction, no opaque zone formation	35-37°C	18-48 Hours
Staphylococcus aureus subsp. aureus	25923	50-100	Luxuriant	>=70%	Positive reaction, yellow colour	Positive reaction, colonies surrounded by opaque zone	35-37°C	18-48 Hours

PACKAGING:

Inpacksizeof100 gm and 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

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

REFERENCES

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5. 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.
6. Marwin, 1958, Am. J. Clin. Pathol., 30:470.
7. Schaub and Merrit, 1960, Bull. Johns Hopkins Hosp., 106:25.
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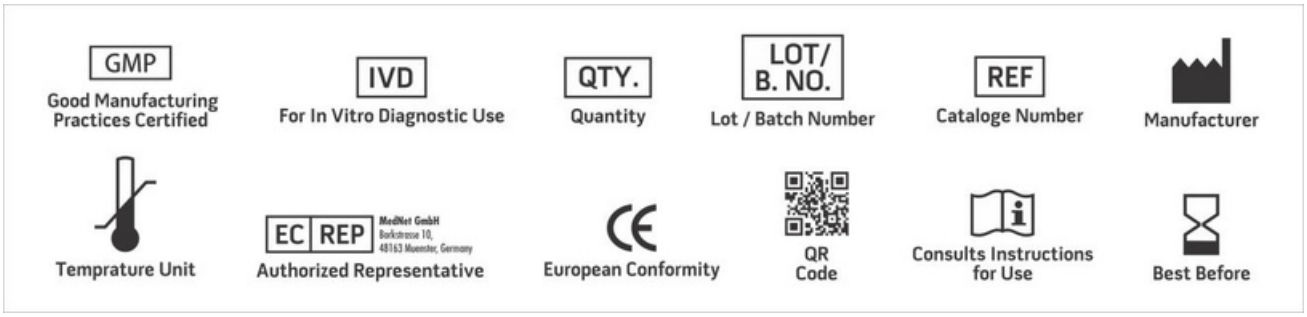

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*For LabUse Only