TM 061 – CHAPMAN STONE AGAR

INTENDED USE

For selective isolation of Staphylococci causing food poisoning.

PRODUCT SUMMARY AND EXPLANATION

Staphylococcus aureus is one of the pathogens most frequently isolated from clinical specimens. In fact, *S.aureus* is currently the most common cause of nosocomial infections. Treatment of infection caused by *S.aureus* has become more problematic since the development of multiple drug resistant strains. To identify *S. aureus* from contaminated samples more easily and reliably, selective media have been developed. Chapman Stone Agar is a selective media used for the isolation of food poisoning staphylococci. Foods commonly contaminated with *S. aureus* included synthetic creams, custards and high-salted food.

Chapman Stone Agar is prepared according to the modification of Staphylococcus Medium 110 described by Chapman. It is similar to Staphylococcus Medium 110, previously described by Chapman, except that the sodium chloride concentration is reduced to 5.5% and additionally ammonium sulfate is included in the formulation. The main modification consists the inclusion of ammonium sulfate in the medium that allows the direct observation of gelatin hydrolysis, instead of adding reagents to the plate medium. Chapman Stone Medium is especially recommended for suspected food poisoning studies involving *Staphylococcus*.

Material under test is inoculated on the surface and incubated at 30°C for 48 hours to produce separated colonies. After incubation, cream to golden yellow colonies surrounded by clear zones are presumptively identified as *S.aureus*. White or non-pigmented colonies, with or without a clear zone, are presumptively identified as *S. epidermidis*. Coagulase activity should be performed to confirm the findings. Enterococci and/or Group D streptococci may exhibit growth on the medium and show slight mannitol fermentation. The colonies, however, are tiny and can easily be differentiated from staphylococci by gram stain and the catalase test.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	10.000
Yeast extract	2.500
Gelatin	30.000
D-Mannitol	10.000
Sodium chloride	55.000
Ammonium sulphate	75.000
Dipotassium hydrogen phosphate	5.000
Agar	15.000

PRINCIPLE

Tryptone, yeast extract provide nitrogen, carbon, sulphur, vitamin B and trace elements. Sodium chloride acts as a selective agent, which inhibits most of the bacterial species. Mannitol is the fermentable carbohydrate and its fermentation can be detected by adding a few drops of bromocresol purple resulting in production of yellow colour. Gelatin hydrolysis is observed as clear zones around colonies. It is selective, due to the relatively high salt content, and is differential due to pigmentation, mannitol fermentation and the presence or absence of gelatin liquefaction. Due to the presence of ammonium sulphate in the medium itself there is no need to flood the plate with ammonium sulphate solution for detection of gelatin liquefaction by the isolates, which is known as Stones method. Dipotassium phosphate provides buffering capability

INSTRUCTION FOR USE

- Dissolve 20.25 grams in 100 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 10 minutes.
- Cool to 45-50°C. Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow coarse free flowing powder.
Appearance of prepared medium : Light amber coloured, opalescent gel forms in Petri plates.
pH (at 25°C) : 7.0±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Mannitol fermentation	Gelatinase production	Incubation Temperature	Incubation Period
Escherichia coli	25922	>=10^3	Inhibited	0%	-	-	25-30°C	18-48 Hours
Staphylococcus aureus	25923	50-100	Luxuriant	>=70%	Positive reaction, production of yellow colour on addition of Bromo cresol purple	Positive reaction, clearing or halo	25-30°C	18-48 Hours
Staphylococcus epidermidis	12228	50-100	Luxuriant	>=70%	Negative reaction, no production of yellow colour on addition of Bromo cresol purple	Positive reaction, clearing or halo	25-30°C	18-48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

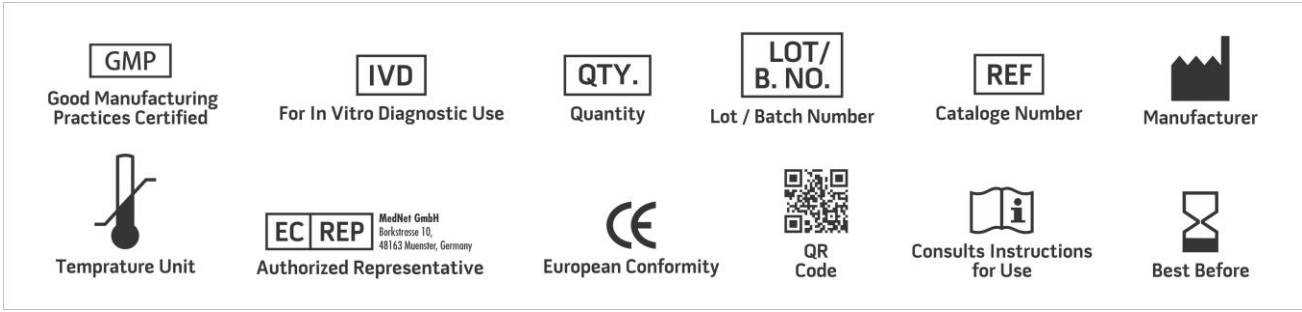
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided 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. Chapman G. H., 1949, J. Bacteriol., 58:823
2. Chapman G. H., 1948, Food Res., 13:100.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification -Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
4. Stone, 1935, Proc. Soc. Exp. Biol. N.Y., 33:185.



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

***For Lab Use Only**

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