TM 1067 – PHENYLALANINE MALONATE BROTH (SHAW & CLARKE MEDIUM)

INTENDED USE

For differentiation of members of *Enterobacteriaceae* on the basis of their ability to utilize malonate and produce pyruvic acid from phenylalanine.

PRODUCT SUMMARY AND EXPLANATION

The term enteric bacteria is generally used in reference to organisms of the Family Enterobacteriaceae, many members of which occur in the enteric tract of humans and animals. Members of Enterobacteriaceae are the most frequently encountered bacterial isolates recovered from clinical specimens. Definitive identification of the members of the Enterobacteriaceae may require a battery of biochemical tests. This medium is prepared according to the formulation developed by Shaw and Clarke for differentiating gram-negative enteric bacteria on the basis of their ability to utilize malonate and produce pyruvic acid from phenylalanine.

COMPOSITION

Ingredients	Gms / Ltr
Yeast extract	1.000
Sodium malonate	3.000
DL-Phenylalanine	2.000
Ammonium sulphate	2.000
Dipotassium phosphate	0.600
Monopotassium phosphate	0.400
Sodium chloride	2.000
Bromo thymol blue	0.025

PRINCIPLE

The medium consists of Yeast extract which supplies nutrients to the organisms while phosphates buffer the medium. Bromothymol blue is the pH indicator. Sodium chloride maintains osmotic balance.

INSTRUCTION FOR USE

- Dissolve 11.03 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Dispense in tubes and sterilize by autoclaving at 115°C for 10 minutes.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to light green homogeneous free flowing powder.
Appearance of prepared medium : Yellowish green coloured clear solution without any precipitate.
pH (at 25°C) : 6.3 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Malonate	Phenylalanine	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Luxuriant	Negative reaction	Negative reaction	35-37°C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Luxuriant	Positive reaction, dark blue colour	Negative reaction	35-37°C	18-24 Hours
Proteus mirabilis	19615	50-100	Luxuriant	Negative reaction	Positive reaction, green colouration after addition of 10% ferric chloride	35-37°C	18-24 Hours
Providencia alcalifaciens	29212	50-100	Luxuriant	Negative reaction	Positive reaction, green colouration after addition of 10% ferric chloride	35-37°C	18-24 Hours
Salmonella Arizonae	13314	50-100	Luxuriant	Positive reaction, dark blue colour	Negative reaction	35-37°C	18-24 Hours
Salmonella Typhimurium	14028	50-100	Luxuriant	Negative reaction	Negative reaction	35-37°C	18-24 Hours

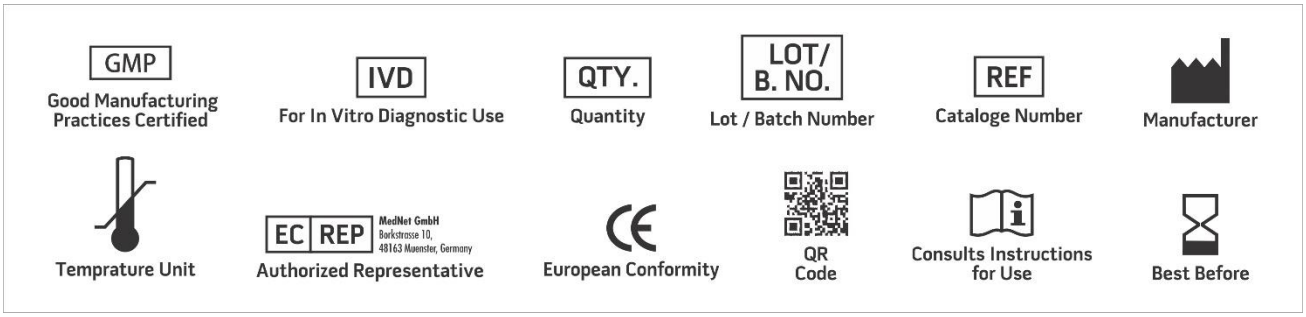
PACKAGING:
In pack size of 100 gm bottles.

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. Koneman E. W., Allen S. D., Janda W.M., Schreckenberger P. C., Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4 th Ed., J. B. Lippinccott Company
2. Shaw C. and Clarke, 1955, J. Gen. Microbiol., 13:155.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore

4. Collee J.G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1996, 14th Edition, Churchill Livingstone.



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

***For Lab Use Only**

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