

CM 21212 - MOELLER DECARBOXYLASE BROTH W/ ARGININE HCl (VEG.)

INTENDED USE

For differentiation of bacteria on the basis of their ability to decarboxylate L-Arginine hydrochloride.

PRODUCT SUMMARY AND EXPLANATION

Moeller decarboxylase broth w/ arginine hcl (veg.) media are prepared by replacing animal based peptones with vegetable peptones which are BSE/TSE risks free. Moeller Decarboxylase Broth with Arginine hydrochloride is used for differentiating gram-negative enteric bacilli on the basis of their ability to decarboxylate L-Arginine hydrochloride. Decarboxylase Broth was introduced by Moeller for detecting the production of lysine and ornithine decarboxylase and arginine dihydrolase. Prior to Moeller's work, bacterial amino acid decarboxylases were studied by Gale and Gale and Epps. Decarboxylase media are also recommended by standard methods for identification of bacteria. Acid produced stimulates decarboxylase enzyme. Arginine is first hydrolyzed to ornithine which is then decarboxylated to form putrescine. Formation of the amine putrescine increases the pH of the medium, changing the colour of the indicator from yellow to purple. If the organisms do not produce the appropriate enzyme, the medium remains acidic, yellow in colour. Each isolate to be tested should also be inoculated into the basal medium tube lacking the amino acid. After incubation, a decarboxylase test may show two layers of different colours, yellow and purple. Shake the tube gently before interpreting the results.

COMPOSITION

Ingredients	Gms / Ltr
Veg peptone	5.000
Veg extract	5.000
Dextrose	0.500
Bromocresol purple	0.010
Cresol red	0.005
Pyridoxal	0.005
L-Arginine hydrochloride	10.000

PRINCIPLE

These media contain Veg extract and Veg peptone which provide nitrogenous nutrients for the growth of bacteria. Dextrose is the fermentable carbohydrate and pyridoxal is the co-factor for the decarboxylase enzyme. Bromocresol purple and cresol red are the pH indicators in the medium. When the medium is inoculated with the dextrose fermenting bacteria, the pH is lowered due to acid production which changes the colour of the indicator from purple to yellow. Arginine is first hydrolyzed to ornithine which is then decarboxylated to form putrescine.

INSTRUCTION FOR USE

Dissolve 20.52 grams in 1000 ml distilled water.

Heat if necessary to dissolve the medium completely.

Dispense in 5 ml amount in screw-capped tubes and sterilize by autoclaving at 15 psi pressure (121°C) for 10 minutes.

Cool the tubed medium in an upright position.

Inoculate the tubes and overlay with 2-3 ml of sterile mineral oil.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder : Greenish yellow coloured, homogeneous, free flowing powder.
 Appearance of prepared medium : Purple coloured clear solution without any precipitate.
 pH (at 25°C) : 6.0±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Arginine decarboxylation	Incubation Temperature	Incubation Period
Citrobacter freundii	8090	50-100	Variable reaction	35-37°C	Upto 4 days
Enterobacter aerogenes	13048	50-100	Negative reaction, yellow colour	35-37°C	Upto 4 days
Escherichia coli	25922	50-100	Variable reaction	35-37°C	Upto 4 days
Klebsiella pneumoniae	13883	50-100	Negative reaction, yellow colour	35-37°C	Upto 4 days
Proteus vulgaris	13315	50-100	Negative reaction, yellow colour	35-37°C	Upto 4 days
Pseudomonas aeruginosa	9027	50-100	Positive reaction, purple colour	35-37°C	Upto 4 days
Salmonella Typhi	6539	50-100	Delayed positive reaction/ positive reaction, purple colour	35-37°C	Upto 4 days
Shigella flexneri	12022	50-100	Delayed positive reaction/ positive reaction, purple colour	35-37°C	Upto 4 days

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.

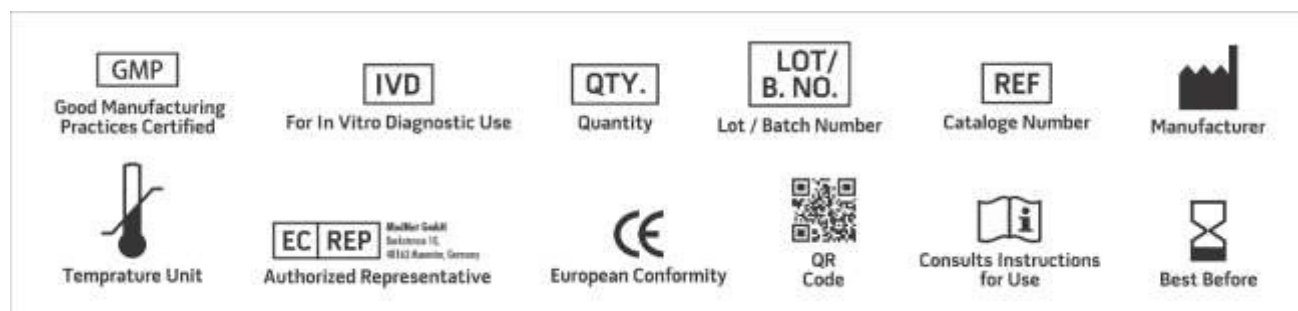
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

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

REFERENCES

1. Moeller V., 1955, Acta Pathol. Microbiol. Scand. 36:158.
2. Gale G. F., 1940, Biochem. J., 34:392.
3. Gale and Epps, 1943, Nature, 152:327.
4. MacFaddin J. F., 2000, Biochemical tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.



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