TM 084 – DECARBOXYLASE AGAR BASE

INTENDED USE

For differentiation of bacteria based on their ability to decarboxylate the amino acid.

PRODUCT SUMMARY AND EXPLANATION

Decarboxylase Agar Base is formulated as described by Moeller to differentiate bacteria on the basis of their ability to decarboxylate the amino acids. The medium is useful for the identification of the *Enterobacteriaceae* and other gram negative bacilli. Production of ornithine decarboxylase is especially useful for differentiating *Enterobacter* and *Klebsiella* species as the former produces this enzyme and are motile while latter are non-motile and do not synthesize this enzyme.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	5.000
Yeast extract	3.000
Dextrose (Glucose)	1.000
Bromocresol purple	0.020
Agar	15.000

PRINCIPLE

The medium consists of Peptone and yeast extract which supply nitrogenous nutrients for the bacterial growth. Dextrose is the fermentable carbohydrate. Bromo cresol purple is the pH indicator which changes colour from purple to yellow in acidic condition. Decarboxylase activity is stimulated by acidic pH and hence the amino acids are decarboxylated or degraded to form corresponding amine. Production of these amines increases the pH of the medium changing the colour of the indicator and in turn the medium from yellow to purple violet.

INSTRUCTION FOR USE

- Dissolve 24.02 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely.
- Add 5 grams of desired L-Amino acid (L-Lysine, L-Arginine, L-Ornithine) in hydrochloride form per litre of the medium.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool to 45-50°C and Dispense into sterile test tubes and cool in a slanted position. When L-Ornithine hydrochloride is used, readjustment of pH is necessary.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to greenish yellow homogeneous free flowing powder.

Appearance of prepared medium : Purple coloured, clear gel forms in tubes as slants.

pH (at 25°C) : 6.5 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation with addition of appropriate amino acids and overlaying with sterile mineral oil.

Microorganism	ATCC	Inoculum (CFU/ml)	Arginine decarboxylation	Ornithine decarboxylation	Lysine decarboxylation	Incubation Temperature	Incubation Period
Citrobacter freundi	8090	50-100	Variable reaction	Variable reaction	Negative reaction, yellow colour	35-37°C	4 Days
Klebsiella aerogenes	13048	50-100	Negative reaction, yellow colour	Positive reaction, purple colour	Positive reaction, purple colour	35-37°C	4 Days
Escherichia coli	25922	50-100	Variable reaction	Variable reaction	Positive reaction, purple colour	35-37°C	4 Days
Klebsiella pneumoniae	13883	50-100	Negative reaction, yellow colour	Negative reaction, yellow colour	Positive reaction, purple colour	35-37°C	4 Days
Proteus mirabilis	25933	50-100	Negative reaction, yellow colour	Positive reaction, purple colour	Negative reaction, yellow colour	35-37°C	4 Days
Proteus vulgaris	13315	50-100	Negative reaction, yellow colour	Negative reaction, yellow colour	Negative reaction, yellow colour	35-37°C	4 Days
Salmonella Paratyphi A	9150	50-100	Negative reaction/ delayed positive reaction	Positive reaction, purple colour	Negative reaction, yellow colour	35-37°C	4 Days
Salmonella Typhi	6539	50-100	Negative reaction/ delayed positive reaction	Negative reaction, yellow colour	Positive reaction, purple colour	35-37°C	4 Days
Serratia marcescens	8100	50-100	Negative reaction, yellow colour	Positive reaction, purple colour	Positive reaction, purple colour	35-37°C	4 Days
Shigella dysenteriae	13313	50-100	Negative reaction/ delayed positive reaction	Negative reaction, yellow colour	Negative reaction, yellow colour	35-37°C	4 Days
Shigella flexneri	12022	50-100	Negative reaction/ delayed positive reaction	Negative reaction, yellow colour	Negative reaction, yellow colour	35-37°C	4 Days

Shigella sonnei	25931	50-100	Variable reaction	Positive reaction, purple colour	Negative reaction, yellow colour	35-37°C	4 Days
Pseudomonas aeruginosa	27853	50-100	Positive reaction, purple colour	Negative reaction, yellow colour	Negative reaction, yellow colour	35-37°C	4 Days

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
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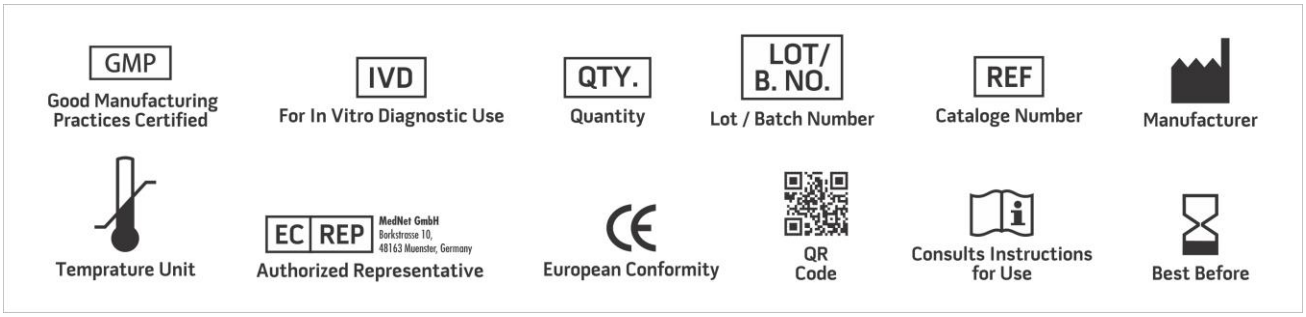
3. Kelly, Brenner and Farmer, 1985, In Manual of Clinical Microbiology, Lennette, Balows, Hausler and Shadomy (Eds.), 4th ed., ASM, Washington, D.C.
4. MacFaddin J., 1980, Biochemical Tests for Identification of Medical Bacteria, 2nd ed., Williams and Wilkins, Baltimore.
5. MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
6. Moeller, 1955, Acta. Pathol. Microbiol. Scand., 36:158.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.
***For Lab Use Only**
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