Decarboxylase Agar Base

Intended Use
Decarboxylase Agar Base is used to differentiate bacteria on the basis of their ability to decarboxylate the amino acid added to the medium.

Summary
A Medium recommended for the identification of *Enterobacteriaceae* and other Gram-negative bacilli. The production of ornithine decarboxylase helps in differentiating *Enterobacter* and *Klebsiella* species as the former produces this enzyme and is motile while the latter is non-motile and does not synthesize this enzyme.

Principle
The nitrogenous compounds essential for bacterial growth are provided by peptic digest of animal tissue and yeast extract. Dextrose is used as a fermentable carbohydrate. Bromocresol purple, a pH indicator, changes colour from purple to yellow in acidic condition. Decarboxylase activity is stimulated in 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.

Formula*
Ingredients	**g/L**
Peptic Digest of Animal Tissue	5.0
Yeast Extract	3.0
Dextrose	1.0
Bromocresol Purple	0.02
Agar	15.0
Final pH (at 25°C)	6.5 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2ºC-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Specimen Collection and Handling
Ensure that all samples are properly labelled.
Follow appropriate techniques for handling samples as per established guidelines.
Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.
The samples must be stored and tested within the permissible time duration.
After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 24.02 g of the powder in 1000 mL purified / distilled water.
2. Boil to dissolve the powder completely.
3. Add 5 g of desired L-Amino acid (L-Lysine, L-Arginine, L-Ornithine) in hydrochloride form per liter of the medium.
4. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
5. Dispense into sterile test tubes and cool in slanted position.
6. When L-Ornithine hydrochloride is used, readjustment of pH is necessary.

Quality Control
Dehydrated Appearance: Creamish yellow coloured, homogeneous, free flowing powder.
Prepared Appearance: Purple coloured, clear gel forms in tubes as slants.
Cultural Response: Cultural characteristics observed after an incubation at 35-37°C for upto 4 days with addition of appropriate amino acids and overlaying with sterile mineral oil.

Organism (ATCC)	Lysine	Arginine	Ornithine
Citrobacter freundii (8090)	-	(+)	(+)
Klebsiella aerogenes (13048)	+	-	+
Escherichia coli (25922)	+	(+)	(+)
Klebsiella pneumoniae (13883)	+	-	-
Proteus mirabilis (25933)	-	-	+
Proteus hauseri (13315)	-	-	-
Salmonella Paratyphi A (9150)	-	+/+*	+
Shigella dysenteriae (13313)	-	-/+*	-
Shigella flexneri serotype 2b (12022)	-	-/+*	-
Pseudomonas aeruginosa Strain Boston 41501 (27853)	-	+	-

+ = Positive reaction, purple colour
- = Negative reaction, yellow colour
(+) = Variable reaction,
+* = Delayed positive reaction

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Precautions/Limitations

1. Each isolate must be inoculated into a tube of the basal medium without amino acid.
2. If this tube becomes alkaline then the test is invalid.
3. Exposure of the medium to air may cause alkalization so the inoculated tubes if covered with a layer of sterile mineral oil will give best results

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

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4. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201040010500	Dehydrated Culture Media	500 g