



ARGININE DIHYDROLASE BROTH

TM 1140

INTENDED USE

For detection of Arginine dihydrolase producing microorganisms

COMPOSITION

Ingredients	Gms\Ltr
L-Arginine	10.00
Sodium chloride	5.00
Agar	3.00
Peptone	1.00
Dipotassium hydrogen phosphate	0.30
Bromo cresol purple	0.016

PRODUCT SUMMARY AND EXPLANATION

Arginine Dihydrolase Broth is used for detection of arginine dihydrolase producing microorganisms. These types of media are used to differentiate bacteria on the basis of their decarboxylating activity towards the amino acids. Arginine decarboxylase enzyme is also known as Arginine dihydrolase. Arginine dihydrolase production by various members of enteric bacteria aids in differentiating bacteria with closely related physiological characteristics. Bacteria producing arginine dihydrolase enzyme decarboxylates arginine present in this medium. Arginine is first hydrolyzed to form ornithine, which is then decarboxylated to form putrescine. The production of amine, putrescine, elevates the pH which changes the colour of the pH indicator. The colour change of indicator from purple to yellow and then back to purple is positive reaction.

PRINCIPLE

Peptone present in the medium provides necessary nutrients to the organisms while L-arginine stimulates the arginine dihydrolase synthesis. Dipotassium phosphate buffers the medium and sodium chloride maintains the osmotic balance. Bromo cresol purple is the pH indicator which forms purple colour in alkaline conditions.

INSTRUCTION FOR USE

1. Dissolve 19.3gms in 1000ml distilled water.
2. Gently heat to boiling with gentle swirling and dissolve the medium completely.
3. Dispense the medium tubes
4. Sterilize by autoclaving at 15psi (121°C) for 15 minutes.
5. Cool to room temperature in an upright position.



QUALITY CONTROL SPECIFICATIONS

Appearance of Powder: Light yellow to grey colour, homogeneous free flowing powder

Appearance of prepared medium: Purple colour, clear to slightly opalescent gel

pH (at 25°C): 6.0 ± 0.2

INTERPRETATION:

Cultural characteristics observed after incubation at 35-37°C for 18-24 hours.

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Motility	Arginine Dihydrolase*
<i>Enterobacter aerogenes</i>	13048	50-100	Luxuriant	Positive, Growth away from stabline causing turbidity	Negative reaction
<i>Klebsiella pneumoniae</i>	13883	50-100	Luxuriant	Negative, Growth along the stabline, surrounding medium remains clear	Negative reaction
<i>Proteus vulgaris</i>	13315	50-100	Luxuriant	Positive, Growth away from stabline causing turbidity	Negative reaction
<i>Salmonella typhi</i>	6539	50-100	Luxuriant	Positive, Growth away from stabline causing turbidity	Positive reaction
<i>Salmonella typhimurium</i>	14028	50-100	Luxuriant	Positive, Growth away from stabline causing turbidity	Positive reaction
<i>Enterobacter sakazakii</i>	12868	50-100	Luxuriant	Positive, Growth away from stabline causing turbidity	Positive reaction

*Negative Reaction : Yellow colour or no change

Positive Reaction : Purple colour

STORAGE & STABILITY

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°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.

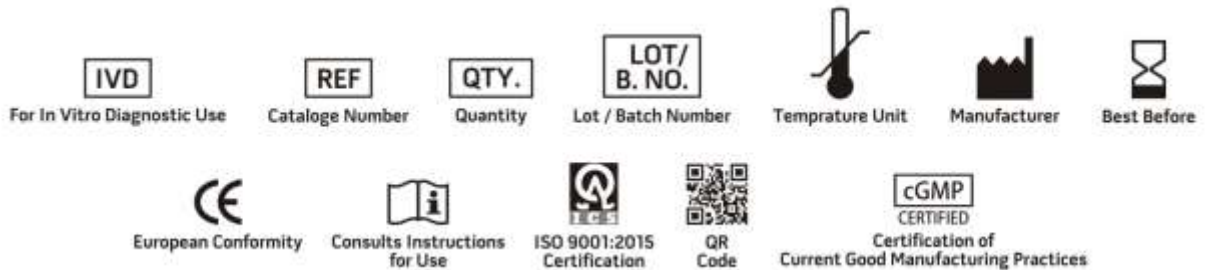


www.tmmedia.in

PRODUCT DATA SHEET

REFERENCES

1. Moeller, V. 1954. Activity determination of amino acid decarboxylases in Enterobacteriaceae. Acta Pathol. Microbiol. Scand. 34:102-111.
2. Moeller, V. 1954. Distribution of amino acid decarboxylases in Enterobacteriaceae. Acta Pathol. Microbiol. Scand. 34:259-277.
3. Moeller, V. 1955. Simplified tests for some amino acid decarboxylases and for the arginine dihydrolase system. Acta. Pathol. Microbiol. Scand. 36:158-172
4. Gale, E. F. and Epps, H. M. R. 1944. Studies on bacterial amino-acid decarboxylases. Biochem. J., 38, 250.



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