Arginine-Glucose Yeast Extract Agar

Intended Use
Arginine-Glucose Yeast Extract Agar is used for the screening and confirmation of Vibrio species in accordance with FDA BAM.

Summary
Vibrio species are sporogenus, motile rods with polar flagella. Amongst the different species *V. cholerae, V. parahaemolyticus, V. vulnificus* and *V. mimicus* are well-documented human pathogens especially in intestinal diseases such as cholera, whereas *V. alginolyticus, V. fluvialis V. furnissii, V. metschnikovii* and *V. hollisae* are reported to be opportunistic pathogens. Arginine-Glucose Yeast Extract Agar is used for the screening and confirmation of *Vibrio* species from food specimens in accordance with FDA BAM.

Principle
Peptone, Tryptone and yeast extract provide the necessary nitrogenous nutrients and vitamin B complex to the organisms. Glucose acts as the fermentable carbon source. Ferric ammonium citrate and sodium thiosulphate are the indicators for H_2S production and bromocresol purple acts as the pH indicator. This medium contains L-Arginine hydrochloride. The organisms which do not decarboxylate L- Arginine HCl but ferment glucose, gives an alkaline slant and an acid butt.

Formula*

Ingredients	g/L
Peptone	5.0
Yeast Extract	3.0
Tryptone	10.0
Sodium Chloride	20.0
Glucose	1.0
L-Arginine hydrochloride	5.0
Ferric ammonium citrate	0.5
Sodium thiosulphate	0.3
Bromocresol purple	0.02
Agar	13.5
Final pH (at 25°C)	6.9 ± 0.1

*Adjusted to suit performance parameters

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

Type of Specimen
Clinical samples – faeces;
Food samples; Water samples

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 58.32 g of the powder in 1000 mL purified / distilled water
2. Heat to boiling to dissolve the powder completely.

3. Dispense in 5mL amount into test tubes and sterilize by autoclaving at 121°C (15 psi) for 10-12 minutes as per validated cycle.
4. Cool the medium to give slants and /or butts.

Quality Control

Dehydrated Appearance: Light yellow to greyish yellow coloured, homogenous free flowing powder.
Prepared Appearance: Purple coloured clear to slightly opalescent gel forms in tubes as slants with a butt.
Cultural Response: Cultural characteristics observed after an incubation of 18-24 hours at 33°C-37°C.

Organism (ATCC)	**Growth**	**Slant**	**Butt**	**Gas**	**H_2S**
Vibrio cholerae (15748)	Good	K	A	-	-
Vibrio parahaemolyticus (17802)	Good	K	A	+	-
Vibrio vulnificus (29306)	Good	K	A	+	-
Vibrio fluvialis (33809)	Good	K	A	+	-

Note:
K = Alkaline (Purplish colour)
A = Acidic (Colour of the media turns to yellow)
+ = Positive (For H_2S positive blackening of media)
- = No reaction (No blackening of media)
+ = Positive for Gas (formation of bubbles/ gap/ disruption observed into the media)
- = Negative for Gas (no bubble/ gap/ disruption observed into the media)

Interpretation of Results

Inoculate the suspect culture identified through presumptive method to the Arginine-Glusose Yeast Extract Agar slants by streaking and stabbing the butt. Incubate it with loose cap overnight at 35 ºC ± 2ºC.
Organisms that ferment glucose produce a variety of acids, turning the colour of the medium from purple to yellow. More amounts of acids are liberated in butt (fermentation) than in the slant (respiration).
Growing bacteria, that can hydrolyse arginine, produce more alkaline products that neutralize the acid present in the butt making the medium purple. *V. cholerae, V. mimicus , V. parahaemolyticus* and *V. vulnificus* cultures will have an alkaline (purple) slant and an acid (yellow) butt, as arginine is not hydrolyzed. Whereas *V. fluvialis, V. furnissii* and *V. hollisae* show positive arginine hydrolysis indicated by the purple slants and butt. No gas or H_2S is produced by any of the organisms.

Performance and Evaluation

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

1. Directions
2. Storage
3. Expiry

Precaution

In vitro diagnostic Use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens.

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

1. USFDA. Bacteriological Analytical Manual. 18 ed. Washington, DC: AOAC; 2005.
2. Murray PR, Baron EJ, Jorgensen JH, Pfaller MA, Yolken RH. Manual of Clinical Microbiology. 8 ed. Washington, D.C: ASM; 2003
3. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201010220500	Dehydrated Culture Media	500 g

Disclaimer

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.