AKI Medium

M1879

AKI Medium is used for identification of *Vibrio* in accordance with FDA BAM, 1998.

Composition**

Ingredients	Gms / Litre
Peptone	15.000
Yeast extract	4.000
Sodium chloride	5.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 24.0 gms in 970ml distilled water.Heat if necessary to dissolve the medium completely.Sterilise by autoclaving at 15 lbs pressure (121°C) for 15 minutes.Cool and add 30ml of freshly prepared,filter sterilised $NaHCO_3$ and mix. Dispense aseptically into screw capped tubes.

Principle And Interpretation

V. cholerae , the type species of the genus *Vibrio* , is the causative agent of cholera outbreaks and epidemics. Cholera enterotoxin (CT) is the primary virulence factor of these organisms(1,2). Most strains of *V. cholerae* isolated from foods or environment do not produce choleare toxin and are not considered to be virulent. Various biochemical properties and antigenic types are used to characterize the species. *V. mimicus* has been associated with diarrhea following consumption of raw or undercooked seafood. Hence isolates of *Vibrio* should be tested for the production of CT or CTX gene. AKI medium is used for the serological identification of CT of these organisms in accordance with FDA BAM, 1998(3). After enrichment plating, screening and confirmation of the toxins can be done by Y-1 mouse adrenal cell assay and immunoassay methods. Peptone and Yeast extract provide necessary nutrients and Sodium chloride maintains the osmotic equilibrium of the medium.

Blend the food sample to be analysed with Alkaline peptone water (APW) in appropriate ratio and incubate as per the recommendation by FDA BAM. Pure cultures can be isolated from APW by plating a loopful of the inoculums into TCBS agar. Crowded colonies are separated using Tryptone salt agar, w/ 1% NaCl (M1877). For immuno assays, Inoculate test cultures into AKI medium and incubate at 35 ±2°C 18 h with shaking at 100 rpm. Centrifuge 5 to 7 ml of culture at 8,000 x g for 10 min. Filter sterilize the supernatant through a 0.2 µm filter or used as is for immunological assays for the presence of cholera toxin (CT) .

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light yellow coloured clear solution without any precipitate

Reaction
Reaction of 2.4% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH
7.20-7.60

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours

Cultural Response

Organism	Inoculum (CFU)	Growth
Cultural Response		
Vibrio cholerae ATCC 14035	50-100	luxuriant

Vibrio parahaemolyticus ATCC 17802	50-100	luxuriant

Storage and Shelf Life

Store below 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.

Reference

1.Spira, W. M . and Fedorka-Cray, P.J. 1984. Infect. Immun, 45: 679-684.
2.Karaolis, D. K., Johnson, J.A., Bailey, C.C., Boedeker, E.C., Kaper, J.B. and Reeves, P.R 1998. Proc. Natl. Acad. Sci. U. S. A., 95(6): 3134-3139.
3.FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.

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