



Kaper's Medium

M1169

Kapers Medium is used for enumeration and identification of *Aeromonas hydrophila* from foods.

Composition**

Ingredients	Gms / Litre
Proteose peptone	5.000
Yeast extract	3.000
Casein enzymic hydrolysate	10.000
L-Ornithine hydrochloride	5.000
Mannitol	1.000
Inositol	10.000
Sodium thiosulphate	0.400
Ferric ammonium citrate	0.500
Bromocresol purple	0.020
Agar	3.000
Final pH (at 25°C)	6.7±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 37.92 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense into tubes (5 ml). Sterilize by autoclaving at 15 lbs pressure (121°C) for 12 minutes.

Principle And Interpretation

Aeromonas hydrophila (often referred as motile aeromonads) is a facultative anaerobe, which is characterized by growth at 37°C and motility. The detection of *Aeromonas* species in foods and environmental samples is usually quite easy. However difficulties may arise when quantitative recovery is required or in cases where large number of other organisms are present (1). Kaper et al (2) described a single tube medium for the rapid presumptive identification of *A. hydrophila*, which is also recommended by APHA (3). This single tube medium shows the following reactions: mannitol and inositol fermentation, ornithine decarboxylation and deamination, motility, indole and H₂S production. The food samples should be processed as soon as possible upon arrival at the laboratory. Motile aeromonads are somewhat sensitive to pH values below 5.5; therefore, acidic foods should be processed soon after arrival in the laboratory. On the basis of biochemical characterization, *Aeromonas* can be differentiated as mannitol fermenters, inositol non-fermenters, absence of ornithine decarboxylase, and hydrogen sulfide not produced from thiosulphate.

Casein enzymic hydrolysate, proteose peptone and yeast extract provide essential nitrogenous compounds and B vitamin etc. Sodium thiosulphate and ferric ammonium citrate acts as indicators of H₂S production. Inositol and mannitol are the fermentable carbohydrates; L-ornithine hydrochloride is an amino acid. Bromocresol purple is the pH indicator, which is yellow at acidic pH and purple at neutral to alkaline pH values. Usually in tubes containing Kapers Medium inoculated with *A. hydrophila*, the butts turn yellow due to acid formation and an alkaline band is formed at the top of the medium. Small amount of agar facilitates motility determination.

A. hydrophilla is inoculated in Kapers Medium for the verification of the isolates. After 18-24 hours, *Aeromonas* shows motility, are H₂S negative and indole positive (add 2 drops of Kovacs Reagent (R008) to the tubes and look for a red colour)

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Semisolid, comparable with 0.3% Agar gel.

Colour and Clarity of prepared medium

Please refer disclaimer Overleaf.

Purple coloured, clear to slightly opalescent gel forms in tubes as butts

Reaction

Reaction of 3.79% w/v aqueous solution at 25°C. pH : 6.7±0.2

pH

6.50-6.90

Cultural Response

M1169: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Medium
Cultural Response <i>Aeromonas hydrophila</i> ATCC 7966	50-100	luxuriant	acidic butt, with alkaline band at the top

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.Corry J. E. L., Curtis G. D. W., and Baird R. M., Culture Media for Food Microbiology, Vol. 34, Progress in Industrial Microbiology, 1995, Elsevier, Amsterdam.
- 2.Kaper J., Seidler R. J., Lockman H. and Colwell R. R., 1979, Appl. Environ. Microbiol., 38:1023.
- 3.Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.

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