Technical Information

Kaper's Medium

Product Code: DM 2169

Application: - 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 (25°C)	6.7±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & 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 H_2S 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 first 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 H_2S production. Inositol and mannitol are the fermentable carbohydrates; L-ornithine hydrochloride is an amino acid. Bromocresol purple is the pH indicator, which turns 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 H_2S negative and indole positive (add 2 drops of Kovacs Reagent (025046) to the tubes and look for a red colour)

Methodology

Suspend 37.92 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Dispense into tubes (5 ml). Sterilize by autoclaving at 15 lbs pressure (121°C) for 12 minutes.

Quality Control

Physical Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Semisolid, comparable with 0.3% Agar gel.

Colour and Clarity of prepared medium
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 Range 6.50-6.90

Cultural Response/ characteristics
DM 2169: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

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

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

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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