Dehydrated Culture Media
Bases / Media Supplements

Technical Information

Hektoen Enteric MiVeg Agar

Product Code : VM1467

Application:- Hektoen Enteric MiVeg Agar is recommended for differential and selective isolation of *Shigella* and *Salmonella* species from enteric pathological specimens.

Composition

Ingredients	Gms / Litre
MiVeg peptone No.3	19.00
Yeast extract	3.00
Lactose	12.00
Sucrose	12.00
Salicin	2.00
Synthetic detergent No. I	2.00
Sodium chloride	5.00
Sodium thiosulphate	5.00
Ferric ammonium citrate	1.50
Acid fuchsin	0.10
Bromo thymol blue	0.065
Agar	15.00
Final pH (at 25°C)	7.5 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Hektoen Enteric MiVeg Agar is prepared by using MiVeg peptone No. 3 in place of animal base proteose peptone thus making it free from BSE/ TSE. Hektoen Enteric MiVeg Agar is the modification of Hektoen Enteric Agar which was formulated by King and Metzger (1) and recommended by APHA (2). The increased concentration of carbohydrate and vegetable peptone helps to reduce the inhibitory effect of synthetic detergent and the indicators favours luxuriant growth of *Salmonella* and *Shigella* species while inhibiting the normal intestinal flora. Carbohydrates lactose, sucrose and salicin in the medium helps in differentiation of enteric pathogens. Higher lactose concentration aids in the visualization of enteric pathogens and minimizes the problem of delayed lactose fermentation. Combination of thiosulphate and ferric ammonium citrate in the medium enables the detection of hydrogen sulphide (H_2S) production thereby aiding in the differentiation process due to the formation of black centered colonies.

Hoben et al (3) added Novobiocin (15 mg/litre) to enhance, the selectivity of the conventional medium by inhibiting *Citrobacter* and *Proteus* species. Taylor and Schelhaut (4) found this medium valuable for differentiating pathogenic organisms and for better growth of *Shigellae*. Inoculate the medium with fresh faeces suspended in Ringers solution or inoculate directly with rectal swabs. Spread out the inoculum to obtain isolated colonies and incubate at 35-37°C for 18-24 hours. Further incubation will improve differentiation between *Salmonellae* and *Shigellae*. *Proteus* species may resemble *Salmonellae* or *Shigellae*, hence further testing must be carried out for confirmation.

Methodology

Suspend 76.67 grams of powder media in 1000ml distilled water. Mix thoroughly and heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE.

Quality Control

Physical Appearance

Light yellow w/ tan cast coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Green coloured, clear to slightly opalescent gel forms in petri plates.

Reaction

Reaction of 7.67% w/v aqueous solution is pH 7.5 ± 0.2 at 25°C.

pH Range

7.3 - 7.7

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 12 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
Enterobacter aerogenes (13048)	10^2 - $3x10^2$	Fair-good	>30%	Salmon-orange
Enterococcus faecalis (29212)	10^2 - 10^3	Inhibited	0%	–
Escherichia coli (25922)	10^2 - $3x10^2$	Fair	>20%	Orange
Salmonella serotype Enteritidis (13076)	10^2 - $3x10^2$	luxuriant	>50%	greenish blue*
Salmonella serotype Typhimurium (14028)	10^2 - $3x10^2$	luxuriant	>50%	greenish blue*
Shigella flexneri (12022)	10^2 - $3x10^2$	luxuriant	>50%	greenish blue

Key : * = may have black centers (H_2S production)

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: 2-8^0 in sealable plastic bags for 2-5 day.

Further Reading

1. King, K.S. and Metzger W.I., 1968, Appl.Microbiol., 16:577, 579.
2. Frances Pouch Downes and Keith Ito (Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.
3. Hoben D.A., Ashton D.H.A. and Peterson A.C., 1973, Appl. Microbiol., 21:126.
4. Taylor W.I. and Schelhaut, 1971, Appl.Microbiol., 21:32.

Disclaimer :

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