Cystine Tryptone Agar, HiVeg™ MV159

Cystine Tryptone Agar, HiVeg is recommended for maintenance, subculturing, detection of motility etc. With added carbohydrates, it can be also used for fermentation reactions of fastidious organisms.

Composition ** :

Ingredients	Grams/Litre
HiVeg hydrolysate	20.0
L-Cystine	0.5
Sodium chloride	5.0
Sodium sulphite	0.5
Phenol red	0.017
Agar	2.5

Final pH (at 25°C) 7.3 ± 0.2
** Formula adjusted, standardized to suit performance parameters.

Directions :

Suspend 28.5 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense in tubes in 8 - 10 ml amounts. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and add appropriate carbohydrate. Mix well and allow the tubed medium to cool in an upright position.

Principle and Interpretation :

This medium is prepared by completely replacing Casein enzmyic hydrolysate by HiVeg hydrolysate that is free from BSE/TSE risks. Cystine Tryptone Agar, HiVeg is the modification of Cystine Tryptone Agar which can be used as a maintenance medium for many fastidious organisms like *Brucella, Corynebacteria, Pasteurella, Pneumococci* and *Streptococci* without added enrichments (1, 2, 3). Anaerobic organisms like *Actinomyces bovis, Bacteroides funduliformis* and *Leptotrichia* (4) grow well on this medium in presence of Carbon dioxide (CO_2). The medium contains cystine & peptone which supply the nutrients necessary to support the growth of fastidious microorganisms.
Motility can be detected in this medium by stabbing the cultures. Motility is indicated by diffuse growth throughout the medium after incubation. Non-motile organisms show growth only in the inoculated area, whereas surrounding area remains clear. This medium is recommended as a basal medium for studying fermentation reactions of fastidious organisms because it is free from fermentable carbohydrates. Carbohydrate fermentation is detected by the colour change of the medium from red to yellow due to the pH indicator dye, phenol red incorpoarted in the medium. Cystine Tryptone Agar, HiVeg like the conventional medium requires heavy inoculum and still many times gives delayed results. Inadequate growth in many carbohydrates is due to different strains having various nutritional requirements. Addition of more than 0.5% cabohydrates may necessiate pH adjustment. Some times sodium chloride in the medium has inhibitory effect on *Neisseria gonorrhoeae*. Medium should be freshly prepared and cooled just before inoculation.

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV159 HiVeg hydrolysate	**M159** Casein enzymic hydrolysate

Recommended for	:	Maintenance, subculturing, detection of motility, fermentation studies of fastidious organisms.
Reconstitution	:	28.5 g/l
Quantity on preparation (500g)	:	17.54 L
(100g)	:	3.5 L
pH (25°C)	:	7.3 ± 0.2
Supplement	:	Carbohydrate
Sterilization	:	121°C / 15 minutes.

Storage : Dry Medium - Below 30°C, Use freshly prepared medium

Quality Control :

Appearance of powder
Pink coloured, homogeneous, free flowing powder.
Gelling
Semisolid, comparable with 0.25% Agar gel.
Colour and Clarity
Red coloured clear to slightly opalescent gel forms in tubes as butts.
Reaction
Reaction of 2.85% w/v aqueous solution is pH 7.3 ± 0.2 at 25°C.
Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 4 - 18 hours or longer if necessary.

Organisms (ATCC)	Inoculum (CFU)	Growth	Motility	Acid*
Escherichia coli (25922)	10^2-10^3	good-luxuriant	+	+
Neisseria gonorrhoeae (19424)	10^2-10^3	good	-	+
Neisseria meningitidis (13090)	10^2-10^3	good	-	+
Streptococcus pneumoniae (6303)	10^2-10^3	good	-	+

Key : + = positive reaction, yellow colouration for acid/ diffused growth for motility
- = negative, no colour change / non motile
* = in presence of dextrose

References :

1. Peterson and Hartsell, 1955, J. Inf. Dis., 96:75.
2. Myers and Koshy, 1962, Am. J. Pub. Health, 96:75.
3. Alford, Wiese and Gunter, 1955, J. Bact., 69:518.
4. Kroeger and Sibal, 1961, J. Bact., 50:581.

◉ Prepared from GMO free Vegetable proteins replacing Animal based peptones. Freedom from BSE/TSE worries.