C.L.E.D. HiVeg™ Agar with Andrade Indicator MV352

C.L.E.D. HiVeg Agar, with Andrade Indicator is recommended for urine bacteriology, supporting the growth of all urinary pathogens and giving good colonial differentiations and clear diagnostic characteristics.

Composition ** :

Ingredients	Grams/Litre
HiVeg peptone	4.0
HiVeg extract	3.0
HiVeg hydrolysate	4.0
Lactose	10.0
L-Cystine	0.128
Bromo thymol blue	0.02
Andrade indicator	0.1
Agar	15.0

Final pH (at 25°C) 7.5 ± 0.2
** Formula adjusted, standardized to suit performance parameters.

Directions :

Suspend 36.25 grams in 1000 ml of distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle and Interpretation :

C.L.E.D. HiVeg Agar with Andrade Indicator is specially developed using HiVeg peptone, HiVeg hydroysate and HiVeg extract to avoid BSE/TSE risks associated with animal origin peptones.
Originally Mackey and Sandys devised C.LE.D. medium with lactose, L-Cystine and BTB for growing urinary pathogens (1). C.L.E.D. HiVeg Agar with Andrade Indicator is the modification of this medium and is recommended for urinary bacteriology, supporting the growth of all urinary pathogens and giving good colonial differentiations. HiVeg peptone, HiVeg hydrolysate and HiVeg extract provide essential growth nutrients. Lactose is the fermentable sugar. L-Cystine supports the growth of cystine-dependent coliforms (2). Bromothymol blue is the pH indicator which turns yellow at acidic pH. Addition of Andrade's indicator, enhances the appearance of colony and aids in the identification of microorganisms. At different pH values, the colour of the medium varies from the standard medium, which is well documented by Bevis (3).

pH	Colour of C.L.E.D. medium
7.4	deep blue
7.0	bluish grey
6.8	pale grey
6.6	pinkish grey
6.4	bright red with whitish tinge
6.0	bright red

For better results, the medium should not be incubated for more than 24 hours because if lactose fermenters predominate, the entire medium may turn pink masking the presence of non-lactose fermenters. The medium should be generally inoculated immediately after urine collection. *Shigella* species may not grow on this medium.

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV352 HiVeg peptone HiVeg hydrolysate HiVeg extract	**M352** Peptic digest of animal tissue Casein enzymic hydrolysate Beef extract

Recommended for	:	Detecting pathogens of Urinary Tract Infections
Reconstitution	:	36.25 g/l
Quantity on preparation (500g)	:	13.79 L
(100g)	:	2.75 L
pH (25°C)	:	7.5 ± 0.2
Supplement	:	None
Sterilization	:	121°C / 15 minutes.

Storage : Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

Prior initiation of antibiotic therapy, urine with low pH (less than 5) etc. may result in low count of organisms from infected patients.

Quality Control :

Appearance of powder
Greyish yellow coloured, may have slightly greenish tinge,homogeneous, free flowing powder.
Gelling
Firm, comparable with 1.5% Agar gel.
Colour and Clarity
Greenish blue coloured, clear to slightly opalescent gel forms in petri plates.
Reaction
Reaction of 3.62% w/v aqueous solution is pH 7.5 ± 0.2 at 25°C.
Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
Enterobacter aerogenes (13048)	10^2-10^3	luxuriant	>70%	greyish green, mucoid
Enterococcus faecalis (29212)	10^2-10^3	luxuriant	>70%	orange-yellow or greenish
Escherichia coli (25922)	10^2-10^3	luxuriant	>70%	bright pink with pink halo
Proteus mirabilis (25933)	10^2-10^3	luxuriant	>70%	blue-green
Staphylococcus aureus (25923)	10^2-10^3	luxuriant	>70%	golden-yellow
Streptococcus pyogenes (19615)	10^2-10^3	luxuriant	>70%	greyish green

References :

1. Mackey and Sandys ., 1965, Br. Med J. 2:1286.
2. Mackey and Sandys ., 1966, Br. Med J. 1:1173.
3. Bevis T.D., 1968, J. Med. Lab. Technol., 25:38.

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

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