Technical Information

XLD MiVeg Agar (Xylose Lysine Deoxycholate MiVeg Agar)

Product Code : VM1031

Application:- Xylose Lysine Deoxycholate MiVeg Agar is recommended for the selective isolation and enumeration of *Salmonella* serotype Typhi and other *Salmonella* species.

Composition**

Ingredients	Gms / Litre
Yeast extract	4.0
L-Lysine	5.0
Lactose	7.5
Sucrose	7.5
Xylose	3.5
Sodium chloride	5.0
Synthetic detergent No. III	1.5
Sodium thiosulphate	6.8
Ferric ammonium citrate	0.8
Phenol red	0.08
Agar	15.0
Final pH (at 25°C)	7.4± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Xylose Lysine Deoxycholate MiVeg Agar is prepared by using synthetic detergent No.III in place of sodium deoxycholate (i.e., of animal origin) thereby making the medium BSE/TSE risks free. This medium is the modification of Xylose Lysine Deoxycholate Agar which is a selective as well as differential medium formulated by Taylor (1) for the isolation and identification of enteric pathogens especially *Shigellae* from stool samples.

Synthetic detergent No. III inhibits gram-positive microorganisms. Xylose is fermented by almost all the enteric bacteria except *Shigellae* which in turn helps to differentiate *Shigellae* from *Salmonellae*. Thiosulphate and ferric ammonium citrate are the hydrogen sulphide (H_2S) indicators in the medium. Phenol red serve as an pH indicator. Xylose is metabolized by *Salmonellae* species and after complete exhaustion of xylose from the medium, the *Salmonellae* starts lysine decarboxylation with change in pH to alkaline and thus mimic *Shigellae* reaction. However, to prevent this reaction by lysine positive coliforms, lactose and sucrose are added in excess to produce acid and hence nonpathogenic hydrogen sulphide (H_2S) producers do not decarboxylate lysine. Like conventional medium, this medium is an ideal medium for screening of the samples containing mixed flora of enteric pathogens, as recovery of *Salmonellae* and *Shigellae* is not conspicuous by even profuse growth of other species (2, 3). This medium can be used as a diagnostic aid in the identification of *Enterobacteriaceae*.

Methodology

Suspend 56.68 grams of powder media in 1000 ml distilled water. Mix thoroughly and heat to boiling with frequent agitation until the medium boils. DO NOT AUTOCLAVE OR DO NOT OVERHEAT. Immediately transfer to a water bath at 50°C. Cool to 45°C and pour into sterile petriplates. It is advisable not to prepare large volumes which will require prolonged heating and may produce precipitate.

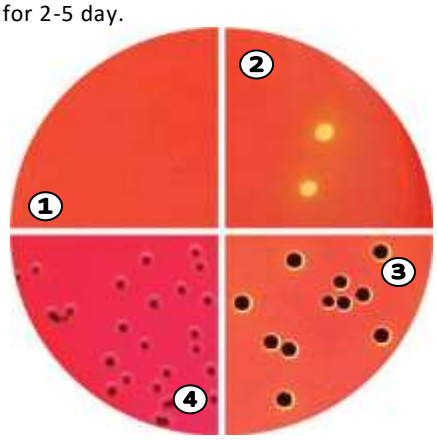
Quality Control

Physical Appearance
Pink coloured, homogeneous, free flowing powder.
Gelling
Firm, comparable with 1.5% Agar gel.
Colour and Clarity of prepared medium
Red coloured, clear to very slightly opalescent gel forms in petri plates.
Reaction
Reaction of 5.67% w/v aqueous solution is pH 7.4± 0.2 at 25°C.
pH Range
7.2-7.6
Cultural Response/Characteristics
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	Fair	>10%	yellow
Escherichia coli (25922)	10^2-10^3	Fair-good	>10%	yellow
Proteus mirabilis (25933)	10^2-10^3	Good-Luxuriant	>50%	yellow
Proteus vulgaris (13315)	10^2-10^3	Good-Luxuriant	>50%	yellow
Salmonella serotype Paratyphi A	10^2-10^3	Good-Luxuriant	>50%	Red
Salmonella serotype Paratyphi B	10^2-10^3	Good-Luxuriant	>50%	Red with black centres
Salmonella serotype Enteritidis	10^2-10^3	Good-Luxuriant	>50%	Red with black centres
Salmonella serotype Typhi (6539)	10^2-10^3	Good-Luxuriant	>50%	Red with black centres
Salmonella serotype Typhimurium (14020)	10^2-10^3	Good-Luxuriant	>50%	Red with black centres
Shigella dysenteriae (13313)	10^2-10^3	Good-Luxuriant	>50%	red
Shigella flexneri (12022)	10^2-10^3	Good	>30%	red
Shigella sonnei (25931)	10^2-10^3	Good	>30%	red
Staphylococcus aureus (25923)	10^2-10^3	Inhibited	0%	-

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.



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1. Control
2. *Escherichia coli*
3. *Salmonella* serotype
4. *Salmonella* serotype Typhimurium

Further Reading

1. Taylor W.I. 1965, Am. J. Clin. Path. 44:471.
2. McCarthy M.D., 1966, N.Z. J. Med. Lab. Technol., 20:127.
3. Isenberg H.D., Kominos S. and Siegal M., 1969, Appl. Microbiol., 18:656.

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