Technical Information

Wagatsuma MiVeg Agar Base

Product Code : VM1626

Application:- Wagatsuma MiVeg Agar Base is recommended for the performance of Kanagawa test to identify virulent *Vibrio parahaemolyticus* strain.

Composition**

Ingredients	Gms / Litre
MiVeg peptone	10.0
Yeast extract	3.0
Sodium chloride	70.0
Dipotassium phosphate	5.0
Mannitol	10.0
Crystal violet	0.001
Agar	15.0
Final pH (at 25°C)	8.0 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Wagatsuma MiVeg Agar Base is prepared by adding MiVeg peptone instead of Peptic digest of animal tissue thereby making the medium BSE/TSE risks free. Wagatsuma MiVeg Agar is the modification of Wagatsuma Agar which was formulated as described by Wagatsuma (1) and it is also recommended by APHA (2) for differentiation of pathogenic *Vibrio parahaemolyticus* from nonpathogenic strains. Differentiation is based on the ability of this organism to give hemolytic reaction on a medium with high salt concentration, termed as Kanagawa phenomenon(3).

Extensive investigation in animal model suggests that Kanagawa haemolysin is the primary virulence factor seen in *Vibrio parahaemolyticus* (4). It has been well established that enteropathogenic *Vibrio parahaemolyticus* strains are always Kanagawa positive and seafood isolates are almost always Kanagawa negative. Beta haemolysis - a zone of transparent clearing of blood cells around colonies within 24 hours incubation at 37°C, considered as Kanagawa positive. MiVeg peptone and yeast extract provide nitrogenous compounds, vitamin B complex and other growth nutrients. Alkaline pH and high salt concentration imparts selectivity to the medium.

Methodology

Suspend 11.3 grams of powder media in 100 ml distilled water. Mix thoroughly and heat to boiling to dissolve the medium completely. Steam for 30 minutes. Cool to 50°C and add 2 ml of (approx 0.5%) suspension of freshly drawn citrated human red blood cells (previously washed 3 times in saline) to 100 ml medium. Mix well before pouring into sterile petriplates.

Quality Control

Physical Appearance

Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Very light bluish coloured, clear to slightly opalescent gel forms in petri plates.

Reaction

Reaction of 11.3% w/v aqueous solution is pH 8.0 ± 0.2 at 25°C.

pH Range

7.8-8.2

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35 - 37°C for 18 - 24 hours with addition of freshly drawn citrated human red blood cell suspension.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Haemolysin*
V. parahaemolyticus (11344) (avirulent	10^2-10^3	luxuriant	>50%	-
Vibrio parahaemolyticus	10^2-10^3	luxuriant	>50%	+ (virulent)

Key : + = transparent zone of clearing of blood cells around colony
* = 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. Wagatsuma S., 1968, Media Circle, 13 : 159.
2. Downes FP and Ito K (Eds.), 2001, Compendium of Methods For The Microbio logical Examination of Foods, 4th ed., APHA, Washington, D.C.
3. Sakazaki R., et al, 1968, Jpn. J. Med. Sci. Biol., 21:325.
4. Twedt R.M., Peeler J.T. and Spaulding P.L., 1980, Appl. Environ. Microbiol., 40:1012.

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