

Technical Information

KCN MiVeg Broth Base w/o KCN

Product Code : VM1936

Application:- Potassium Cyanide MiVeg Broth Base with KCN supplementation is used for differentiation of the members of *Enterobacteriaceae* on the basis of Potassium Cyanide tolerance.

Composition

Ingredients	Gms / Litre
MiVeg peptone No. 3	3.0
Disodium phosphate	5.64
Monopotassium phosphate	0.225
Sodium chloride	5.0
Final pH (at 25°C)	7.6 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Potassium Cyanide MiVeg Broth Base is prepared by adding MiVeg peptone No.3 instead of Proteose peptone thus making the medium free from BSE/TSE risks. This medium is the modification of Potassium Cyanide Broth Base which was formulated by Moeller (1) and further modified by Edwards and Ewing (2) and Edwards and Fife (3) for differentiation of the members of *Enterobacteriaceae*.

MiVeg peptone No.3 provides nitrogenous compounds, sulphur and trace elements essential for the microbial growth. Phosphates is the buffering agent of the medium. Sodium chloride maintains the osmotic equilibrium. Potassium cyanide inhibits many bacteria including *Salmonella*, *Shigella* and *Escherichia* while members of the group *Klebsiella*, *Citrobacter*, *Proteus* grow well. Potassium cyanide medium usually remains stable upto 4 weeks at 4°C (3). Elevated temperature leads to accelerated deterioration of KCN in the medium or evaporation of cyanide (4). The KCN should be destroyed before autoclaving by the addition of a crystal of ferric sulphate and 0.1 ml of 40% potassium hydroxide per tube (5).

Methodology

Suspend 13.9 grams of powder media in 1000 ml distilled water. Mix thoroughly and heat if necessary to dissolve the medium completely. Dispense in 100 ml amounts and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to room temperature and aseptically add sterile 1.5 ml of 0.5% Potassium Cyanide solution to each 100 ml of basal medium. Mix well and dispense in 1 ml amounts.

CAUTION: Potassium Cyanide solution is very toxic thus extreme care should be taken while handling it. Never mouth pipette Potassium Cyanide solution.

Quality Control

Physical Appearance

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

Colour and Clarity of prepared medium

Light amber coloured, clear solution without any precipitate.

Reaction

Reaction of 1.39% w/v aqueous solution is pH 7.6 ± 0.2 at 25°C.

pH Range

7.4 - 7.8

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 24 - 48 hours with added sterile 0.5% Potassium Cyanide Solution..

Organisms (ATCC)	Growth
<i>Citrobacter freundii</i> (8090)	luxuriant
<i>Escherichia coli</i> (25922)	inhibited
<i>Klebsiella pneumoniae</i> (13883)	luxuriant
<i>Proteus vulgaris</i> (13315)	luxuriant
<i>Pseudomonas aeruginosa</i> (27853)	luxuriant
<i>Salmonella</i> serotype Enteritidis (13076)	inhibited
<i>Shigella flexneri</i> (12022)	inhibited

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° in sealable plastic bags for 2-5 day.

Further Reading

1. Moeller V., 1954, Acta. Pathol. Microbiol. Scand., 34:115.
2. Edwards P.R. and Ewing W.H., 1955, Minneapolis, Burgess Publishing Co.
3. Edwards P.R. and Fife M.A., 1956, Appl. Microbiol., 4:46.
4. Munson T.E., 1974, Appl. Microbiol., 27:262.
5. Cowan S.T. and Steel K.J., 1966, Manual for the Identification of Medical Bac-teria, Cambridge, Cambridge University Press.

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