Technical Data

McClung Toabe HiVeg Agar Base

MV387

McClung Toabe HiVeg Agar Base is used for detection and isolation of *Clostridium perfringens* from foods.

Composition**

Ingredients	Gms / Litre
HiVeg peptone No. 3	40.000
Dextrose	2.000
Disodium hydrogen phosphate	5.000
Monopotassium phosphate	1.000
Sodium chloride	2.000
Magnesium sulphate	0.100
Agar	25.000
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 75.10 grams in 900 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 20 minutes. Cool to 45-50°C and aseptically add 100 ml of sterile Egg Yolk Emulsion (FD045). Mix well and pour into sterile Petri plates.

Principle And Interpretation

McClung Toabe HiVeg Agar Base is prepared by incorporating vegetable peptones in place of animal peptones, making it free from BSE/TSE risks. It can be used for the same purpose of McClung Tabe Agar Base (1) for isolating *Clostridium perfringens* from foods. *Clostridium perfringens* food poisoning is one of the most common types of human foodborne illness. The foods usually involved are cooked meat or poultry products containing large number of viable cells. A heat-labile enterotoxin produced only by sporulating cells induces the major symptoms of diarrhea in perfringens poisoning. Although the enterotoxin is not preformed in the food, the foods in which conditions are favourable for sporulation may contain enterotoxin (2). Therefore, enumeration of these microorganisms in food plays a significant role in investigation of food borne illness (3). McClung and Toabe formulated this medium for isolation and differentiation of *Clostridium* species from foods on the basis of their lecithinase and lipase activity that can be visualized by addition of 50% egg yolk. This medium contains HiVeg peptone No.3 as a source of carbon, nitrogen, vitamins and minerals. Dextrose is the carbohydrate source. Sodium chloride maintains osmotic balance of the medium. Magnesium sulphate provides divalent cations and sulfate. Disodium hydrogen phosphate and monopotassium phosphate maintain pH balance and provide a source of phosphates. Lecithinase producing clostridia, such as *Clostridium perfringens* , hydrolyze the lecithin and produce opaque halos of precipitation surrounding the slightly raised colonies. Add 25 grams of food sample to be tested in two tubes containing 25 ml Fluid Thioglycollate HiVeg Medium (MV009) with inverted Durham's tubes. Incubation is carried out at 46°C for 4 -6 hours. Observe the growth and gas production and streak it on McClung Toabe HiVeg Agar plates and incubate.

Quality Control

Appearance

Cream to yellow Homogeneous Free flowing powder

Gelling

Firm, comparable with 2.5% Agar gel.

Colour and Clarity

Basal medium: Amber coloured solution clear to slightly opalescent gel.After addition of egg yolk emlusion : Yellow coloured opalescent gel forms in Petri plates

Reaction

Reaction of 7.51% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH
7.40-7.80

Cultural Response
MV387: Cultural characteristics observed under anaerobic condition with added sterile Egg Yolk Emulsion (FD045) after an incubation at 35 - 37°C fo r 24 - 48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Lecithinase	Lipase activity
Cultural Response					
Clostridium perfringens ATCC 12919	50-100	luxuriant	>=70%	positive reaction, opaque zone around the colony	negative reaction, no irridescent sheen on the growth surface
Clostridium sporogenes ATCC 11437	50-100	luxuriant	>=70%	negative reaction	positive reaction, irridescent sheen on the growth surface
Staphylococcus aureus ATCC 25923	50-100	luxuriant	>=70%	positive reaction, opaque zone around the colony	positive reaction, irridescent sheen on the growth surface

Storage and Shelf Life
Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference
1.McClung, L.S., and R. Toabe, 1947. The egg yolk plate reaction for the presumptive diagnosis of Clostridium sporogenes and certain species of the gangrene and botulinum groups. J. Bact. 53:139. .
2.APHA. 2001. Compendium of Methods for the Microbiological Examination of Foods.F. P Downes and Ito K Ed. 4 ed. Washington, D.C.
3.FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.

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