TM 210 - MCCLUNG TOABE AGAR BASE

INTENDED USE

For detection and isolation of *Clostridium perfringens* in foods.

PRODUCT SUMMARY AND EXPLANATION

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 performed in the food, the foods in which conditions are favourable for sporulation may contain enterotoxin. Therefore, enumeration of these microorganisms in food plays a significant role in investigation of food borne illness.

McClung and Toabe formulated a medium for isolating and differentiating *Clostridium* species from foods on the basis of their lecithinase and lipase activity. With the addition of 50% egg yolk emulsion, *C. perfringens* and a few other *Clostridium* species show the lecithinase reaction. Lecithinase enzyme lyses egg yolk lecithin, producing an opaque zone of precipitation surrounding the slightly raised colonies.

Add 25 grams of food sample to be tested in two tubes containing 25 ml Fluid Thioglycollate Medium with inverted Durhams tube. Incubation is carried out at 46°C for 4-6 hours. Observe for growth and gas production. Streak the presumptive *C. perfringens* on McClung Toabe Agar plates and incubate at 35-37°C for 18-24 hours.

COMPOSITION

Ingredients	Gms / Ltr
Proteose peptone	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

PRINCIPLE

Proteose peptone provides nitrogenous growth nutrients. Dextrose is the fermentable carbohydrate. Phosphates form a good buffering system. Sodium chloride provides essential ions. Magnesium sulphate provides divalent cations and sulphate.

INSTRUCTION FOR USE

- Dissolve 75.1 grams in 900 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 20 minutes.
- Cool to 50°C and aseptically add 100 ml of sterile Egg Yolk Emulsion.
- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.

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

pH (at 25°C) : 7.6±0.2

INTERPRETATION

Cultural characteristics observed after an incubation under anaerobic condition with added sterile Egg Yolk Emulsion.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Lecithinase	Lipase activity	Incubation Temperature	Incubation Period
Clostridium perfringens	*12919*	50-100	Luxuriant	>=70 %	Positive Reaction, opaque zone around the colony	Negative reaction, no irridescent sheen on the growth surface	35-37°C	18-24 Hours
Clostridium sporogenes	*11437*	50-100	Luxuriant	>=70 %	Negative Reaction	Negative reaction, no irridescent sheen on the growth surface	35-37°C	18-24 Hours
Staphylococcus aureus	*25923*	50-100	Luxuriant	>=70 %	Positive Reaction, opaque zone around the colony	Negative reaction, no irridescent sheen on the growth surface	35-37°C	18-24 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

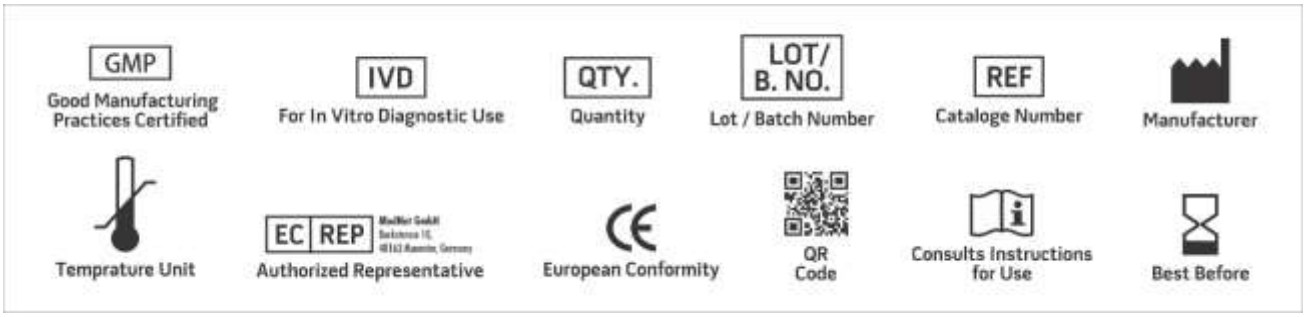
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Downes F. P. and Ito K. (Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.
2. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, DC.
3. McClung L. S. and Toabe R., 1947, J. Bact., 53:139.
4. McClung L. S. and Toabe R., 1964, Public Health Service Publication No. 1142.
5. McClung L. S. and Toabe R., 1968, Laboratory Manual for Food Canners and Processors, Vol. 1, Pg. 25



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

Revision: 08 Nov., 2019