McCLUNG-TOABE AGAR BASE

INTENDED USE
Remel McClung-Toabe Agar (Anaerobic Lecithin-Lipase Agar) is a solid medium recommended for use in qualitative procedures for the isolation and differentiation of *Clostridium* spp.

SUMMARY AND EXPLANATION
In 1947, McClung and Toabe developed a differential plating medium for detection of lecithinase and lipase production by *Clostridium* spp.[1] Dowell and Hawkins used a modification of McClung-Toabe Agar for selective and differential isolation of obligate anaerobic bacteria.[2]

PRINCIPLE
Gelatin peptone supplies amino acids and other nitrogenous compounds necessary for the growth of anaerobic bacteria. Dextrose is an energy source. Sodium chloride is a source of essential electrolytes and maintains osmotic equilibrium. Egg yolk suspension, added to the prepared basal medium, serves as the substrate for detection of lecithinase and lipase activity.[3] Lecithinase degrades lecithin, producing an insoluble, opaque precipitate in the medium surrounding growth.[4] Lipase breaks down free fats in the egg yolk resulting in an iridescent sheen on the colony surface. Egg yolk also serves to reduce the toxic effect of organic peroxides which may accumulate in the medium. Agar is a solidifying agent.

REAGENTS (CLASSICAL FORMULA)*

Gelatin Peptone	40.0 g	Sodium Chloride	2.0 g
Disodium Phosphate	5.0 g	Monopotassium Phosphate	1.0 g
Dextrose	2.0 g	Magnesium Sulfate	0.1 g
		Agar	25.0 g

pH 7.6 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PRECAUTIONS
This product is For Laboratory Use only. It is not intended for use in the diagnosis of disease or other conditions.

PREPARATION OF DEHYDRATED CULTURE MEDIUM
1. Suspend 75 grams of medium in 1000 ml of demineralized water.
2. Heat to boiling with agitation to completely dissolve.
3. Sterilize by autoclaving at 121°C for 15 minutes or following established laboratory guidelines.
4. Cool to 45-50°C and aseptically add 10 ml of Egg Yolk Suspension 50% (REF R450290 or 450291) to each 90 ml of basal medium.
5. Mix thoroughly and dispense into appropriate containers.

PROCEDURE
1. Consult current editions of appropriate references for the recommended procedure for sample preparation, inoculation, testing, and interpretation.

INTERPRETATION OF THE TEST
Lecithinase Production:
Positive Test - An opaque precipitate in the medium surrounding the colonies
Negative Test - No opaque precipitate

Lipase Production:
Positive Test - An iridescent sheen or “oil on water” appearance on the surface of growth and the surrounding medium
Negative Test - No iridescent sheen

QUALITY CONTROL
Each lot number of McClung-Toabe Agar Base has been manufactured, packaged, and processed in accordance with current Good Manufacturing Practice regulations. All lot numbers have been tested using the following quality control organisms and have been found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

CONTROL	INCUBATION	RESULTS
Clostridium perfringens ATCC® 13124	Anaerobic, up to 48 h @ 33-37°C	Growth, Lipase (-), Lecithinase (+)
Clostridium sporogenes ATCC® 3584	Anaerobic, up to 48 h @ 33-37°C	Growth, Lipase (+), Lecithinase (-)
Bacteroides fragilis ATCC® 25285	Anaerobic, up to 48 h @ 33-37°C	Inhibition (partial to complete)
Escherichia coli ATCC® 25922	Ambient, 18-24 h @ 33-37°C	Growth

LIMITATIONS
1. Because the lipase reaction may be delayed, hold plates one week before discarding as negative.[5]

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BIBLIOGRAPHY

1. McClung, L.S. and R. Toabe. 1947. J. Bacteriol. 53:139-147.
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3. Murray, P.R., E.J. Baron, J.H. Jorgensen, M.L. Landry, and M.A. Pfaller. 2007. Manual of Clinical Microbiology. 9th ed. ASM Press, Washington, D.C.
4. Dowell, V.R., G.L. Lombard, F.S. Thompson, and A.Y. Armfield. 1987. Media for the Isolation, Characterization, and Identification of Obligately Anaerobic Bacteria. CDC, Atlanta, GA.
5. MacFaddin, J.F. 1985. Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria. Vol. 1. Williams & Wilkins, Baltimore, MD.

Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, sample collection, storage and transportation, materials required, quality control, and limitations.

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