TMPH 015T - MacConkey AGAR PLATE (W/ 0.15% BILE SALTS, CV AND NaCl) (TRIPLE PACK)

INTENDED USE

For selective isolation and differentiation of coliform organisms and other enteric bacteria in accordance with the harmonized method of USP/EP/BP/JP/IP.

PRODUCT SUMMARY AND EXPLANATION

MacConkey agars are slightly selective and differential plating media mainly used for the detection and isolation of gram-negative organisms from clinical, dairy, food, water, pharmaceutical and industrial sources. It is also recommended for the selection and recovery of the Enterobacteriaceae and related enteric gram-negative bacilli. USP recommends this medium for use in the performance of Microbial Limit Tests.

The medium corresponds with that recommended by APHA and can be used for the direct plating of water samples for coliform bacilli, for the examination of food samples for food poisoning organisms and for the isolation of *Salmonella* and *Shigella* species in cheese. Other than that, this medium is also used for count of coli-aerogenes bacteria in cattle and sheep faeces, the count of coli-aerogenes and non-lactose fermenters in poultry carcasses, bacterial counts on irradiated canned minced chicken and the recognition of coli-aerogenes bacteria during investigations on the genus *Aeromonas*. Lactose fermenting strains grow as red or pink and may be surrounded by a zone of acid precipitated bile. The red colour is due to production of acid from lactose, absorption of Neutral red and a subsequent colour change of the dye when the pH of medium falls below 6.8. Lactose non-fermenting strains, such as *Shigella* and *Salmonella* are colourless and transparent and typically do not alter appearance of the medium.

COMPOSITION

Ingredients	Gms / Ltr
Pancreatic digest of gelatin	17.000
Agar	15.000
Lactose	10.000
Sodium chloride	5.000
Bile salts	1.500
Peptic digest of animal tissue	1.500
Casein enzymic hydrolysate	1.500
Neutral red	0.030
Crystal violet	0.001

PRINCIPLE

Pancreatic digest of Gelatin, peptic digest of animal tissue & Casein enzymic hydrolysate are the nitrogen and vitamin sources in MacConkey Agar. Lactose Monohydrate is the fermentable carbohydrate with Neutral red serving as the pH indicator. Lactose fermenting strains grow as red or pink colonies and may be surrounded by a zone of acid precipitated bile. The red colour is due to production of acid from lactose, absorption of neutral red and a subsequent colour change of the dye when the pH of medium falls below 6.8. Lactose non- fermenting strains, such as *Shigella* and *Salmonella* are colourless, transparent and typically do not alter appearance of the medium. Sodium chloride maintains the osmotic balance. Agar is the solidifying agent. Bile salts mixture and Crystal violet are the selective agents, inhibiting Gram-positive cocci and allowing Gram-negative organisms to grow.

INSTRUCTION FOR USE

Either streak, inoculate or surface spread the test inoculum aseptically on the plate.

QUALITY CONTROL SPECIFICATIONS

Appearance	:	Red with purplish tinge color medium
Quantity of Medium	:	25ml of medium in 90mm plates.
pH (at 25°C)	:	7.1 ± 0.2
Sterility Check	:	Passes release criteria

INTERPRETATION

Cultural response was observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Appearance of colony	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Luxuriant	>=70%	Pink to red colour with bile ppt	30-35˚C	18-24 Hours
Escherichia coli	8739	50-100	Luxuriant	>=70%	Pink to red colour with bile ppt	30-35˚C	18-24 Hours
# *Klebsiella aerogenes*	13048	50-100	Luxuriant	>=70%	Pink to red colour	30-35˚C	18-24 Hours
Enterococcus faecalis	29212	50-100	Poor-Inhibited	0-10%	Pink	30-35˚C	18-24 Hours
Salmonella typhimurium	14028	50-100	Luxuriant	>=70%	Colourless	30-35˚C	18-24 Hours
Salmonella Typhi	6539	50-100	Luxuriant	>=70%	Colourless	30-35˚C	18-24 Hours
Proteus vulgaris	13315	50-100	Luxuriant	>=70%	Colourless	30-35˚C	18-24 Hours
Shigella flexneri	12022	50-100	Fair to good	20-40%	Colourless	30-35˚C	18-24 Hours
Salmonella Enteritidis	13076	50-100	Luxuriant	>=70%	Colourless	30-35˚C	18-24 Hours
Staphylococcus aureus	25923	≥ 1000	Inhibited	-	-	30-35˚C	18-72 Hours
Staphylococcus epidermidis	12228	≥ 1000	Inhibited	-	-	30-35˚C	18-72 Hours

Formerly known as *Enterobacter aerogenes*

PACKAGING:

Triple layered packing containing 5 number of plates with one silica gel desiccant bag packed inside it.

STORAGE

On receipt, store the plates at 15–30 °C. Avoid freezing and overheating. Do not open until ready to use. Prepared plates stored in their original sleeve wrapping until just prior to use may be inoculated up to the expiration date and incubated for recommended incubation times. Allow the medium to warm to room temperature before inoculation.

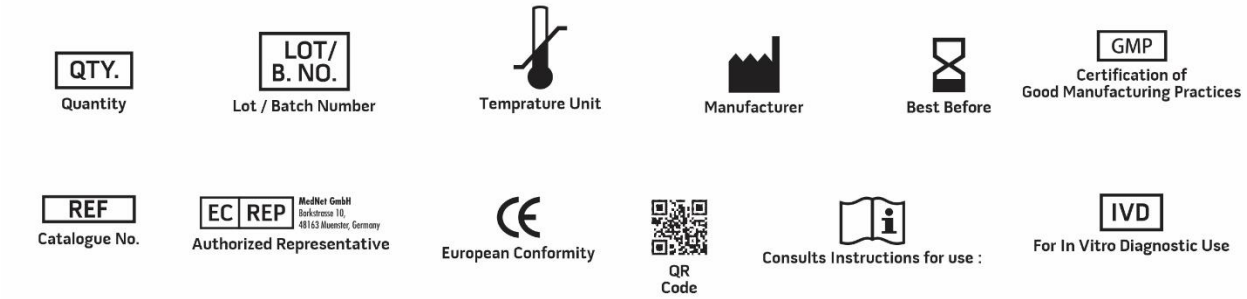
Product Deterioration: Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

DISPOSAL

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

REFERENCES

1. Murray P. R, Baron E, J., Jorgensen J. H., Pfaller M. A., Yolken R. H., (Eds.), 8th Ed., 2003, Manual of Clinical Microbiology, ASM, Washington, D.C.
2. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
3. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
4. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, D.C.
5. Eaton A. D., Clesceri L. S. and Greenberg A. W.,(Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
6. The United States Pharmacopoeia. Amended Chapters 61, 62 & 111, The United States Pharmacopoeial Convention Inc., Rockville, MD. (2009).
7. Williams, (Ed.), 2005, Official Methods of Analysis of the Association of Official Analytical Chemists, 19th Ed., AOAC, Washington, D.C
8. Medrek T. F and Barnes Ella M., 1962, J. Appl. Bacteriol., 25(2),159-168
9. Barnes Ella M. and Shrimpton D. H., 1957, J. Appl. Bacteriol., 20(2),273-285.
10. Thornley Margaret J., 1957, J. Appl. Bacteriol., 20(2), 273-285.
11. Eddy B. P., 1960, J. Appl. Bacteriol., 23(2).216-249.



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

***For Lab Use Only**

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