TMPH 024 - XYLOSE LYSINE DEOXYCHOLATE (XLD) AGAR PLATE

INTENDED USE

For selective isolation and enumeration of *Salmonella Typhi* and other *Salmonella* species with the harmonized method of USP/EP/BP/JP/IP.

PRODUCT SUMMARY AND EXPLANATION

Xylose Lysine Deoxycholate agar (XLD agar) is a selective growth medium used in the isolation of *Salmonella* and *Shigella* species from clinical samples or food products. XLD Agar has been recommended for the identification of Enterobacteriaceae and for the microbiological testing of foods, water and dairy products. The media formulation does not allow the over growth of other organisms over *Salmonella* and *Shigella.* XLD Agar is one of the media used in the Microbial Limit Tests in the USP & EP.

COMPOSITION

Ingredients	Gms / Ltr
Agar	13.500
Sucrose	7.500
Lactose monohydrate	7.500
Sodium thiosulphate	6.800
L-Lysine	5.000
Sodium chloride	5.000
Xylose	3.500
Yeast extract	3.000
Sodium deoxycholate	2.500
Ferric ammonium citrate	0.800
Phenol red	0.080

PRINCIPLE

XLD Agar is both a selective and differential medium. The selective agent in XLD Agar is sodium deoxycholate, which inhibits the growth of gram-positive organisms. It contains yeast extract as a source of nutrients and vitamins. The carbohydrate source is xylose which is fermented by most enteric except for *Shigella* species, and these colonies appear red on this medium as a result. A second differential mechanism for *Salmonella* is employed by the addition of lysine. Lysine decarboxylation reverts the pH of the medium to an alkaline condition. To avoid this reversal to a *Shigella* reaction, lactose and sucrose are added in excess. The addition of sodium thiosulfate and ferric ammonium citrate as a sulphur source and indicator, respectively, allows hydrogen sulphide forming organisms to produce colonies with black centers, under alkaline conditions. Organisms which ferment xylose, are lysine decarboxylase-negative, and do not ferment lactose or sucrose cause an acid pH in the medium, and form yellow colonies.

INSTRUCTION FOR USE

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

QUALITY CONTROL SPECIFICATIONS

Appearance : Red color Medium

Quantity of Medium	:	25ml of medium in 90mm plates.
pH (at 25°C)	:	7.4± 0.2
Sterility Check	:	Passes release criteria

INTERPRETATION

Cultural response was observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Colour of colony	Recovery	Incubation Temperature	Incubation period
Salmonella typhimurium	14028	50-100	Good-Luxuriant	Red with black centres	≥50%	30-35°C	18 – 48 Hours
Salmonella typhi	6539	50-100	Good-Luxuriant	Red with black centres	≥50%	30-35°C	18 – 48 Hours
Proteus mirabilis	25933	50-100	Good-Luxuriant	Grey with black centres	≥50%	30-35°C	18 – 48 Hours
Shigella flexneri	12022	50-100	Fair	Red	30-40%	30-35°C	18 – 48 Hours
Shigella sonnei	25931	50-100	Fair	Red	30-40%	30-35°C	18 – 48 Hours
Escherichia coli	25922	50-100	Partial inhibition	Yellow	20-30%	30-35°C	18 – 48 Hours
Escherichia coli	8739	50-100	Partial inhibition	Yellow	20-30%	30-35°C	18 – 48 Hours
Staphylococcus aureus	25923	≥1000	Inhibited	-	0%	30-35°C	>=72 Hours
Staphylococcus aureus	6538	≥1000	Inhibited	-	0%	30-35°C	>=72 Hours
Enterococcus faecalis	29212	≥1000	Inhibited	-	0%	30-35°C	>=72 Hours

PACKAGING:

Doubled layered packing containing 5 No. 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.

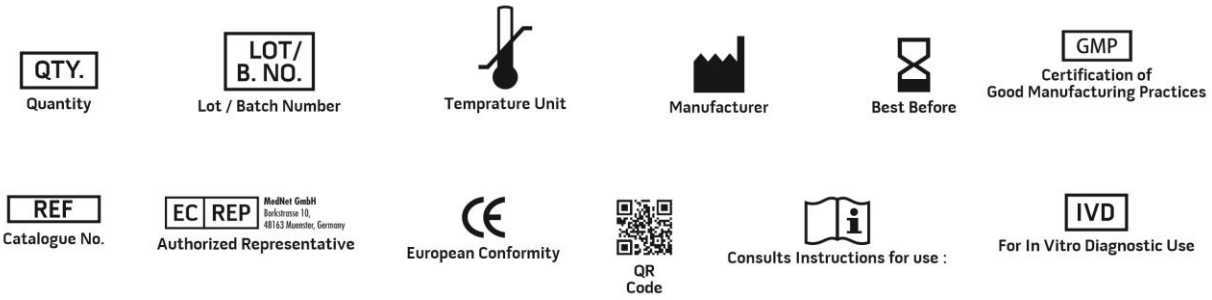
DISPOSAL

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

REFERENCES

1. Taylor, W.I. 1965. Isolation of shigellae. I. Xylose lysine agars; new media for isolation of enteric pathogens. Am. J. Clin. Pathol., 44:471-475.
2. Taylor, W.I., and B. Harris. 1965. Isolation of shigellae. II. Comparison of plating media and enrichment broths. Am. J. Clin. Pathol. 44:476-479.
3. Taylor, W.I., and B. Harris. 1967. Isolation of shigellae III. Comparison of new and traditional media with stool specimens. Am. J. Clin. Pathol. 48:350-355.
4. Taylor, W.I., and D. Schelhart. 1967. Isolation of shigellae. IV. Comparison of plating media with stools. Am. J. Clin. Pathol. 48:356-362.
5. Taylor, W.I., and D. Schelhart. 1968. Isolation of shigellae. VI. Performance of media with stool specimens. Appl. Microbiol. 16:1387-1393
6. Chadwick P., Delisle G. H and Byer M., 1974, Can. J. Microbiol., 20, 1653-1664.
7. Downes F. P. and Ito K. (Ed.), 2001, Compendium of Methods for the Microbiological examination of Foods, 4th Ed., APHA Inc. Washington D.C.

8. Eaton A. D., Clesceri L. S., Rice E. W., and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
9. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C. good-luxuriant good-luxuriant 50 -100 50 -100 50 -100 >=10^3 >=10^3 >=10^3 50 -100 50 -100 50 -100 50 -100 50 -100
10. Williams H., (Ed.), 2005, Official Methods of Analysis of the Association of Official Analytical Chemists, 19th Ed., AOAC, Washington, D.C.
11. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, D.C.
12. Pollock, H.M., and B.J. Dahlgren. 1974. Clinical evaluation of enteric media in the primary isolation of Salmonella and Shigella. Appl. Microbiol. 27:197-201.
13. United States Pharmacopeial Convention, Inc. The United States pharmacopeia 25/ The national formulary 20 – 2002. United States Pharmacopeial Convention, Inc., Rockville, Md. (2001).



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

***For Lab Use Only**

Revision: 22nd March.. 2022