



PRODUCT SPECIFICATION SHEET

Lead Acetate Agar (DM520)

Intended Use

Lead Acetate Agar (DM520) is recommended for detection of hydrogen sulphide producing enteric bacteria.

Product Summary and Explanation

Salmonella, *Shigella*, *Yersinia* species and certain strains of *Escherichia coli* are responsible for severe gastroenteritis and life-threatening systemic illness in human.^(1, 2) *Salmonella* is the primary cause of food-borne illness among enteric pathogens. Of these, *Salmonella typhi* can be differentiated due to their ability to form hydrogen sulphide.⁽³⁾ Lead Acetate Agar was successfully used to study hydrogen sulphide production and is a modification of the original formulation of Spray.^(4,5) Lead Acetate Agar can also be used to differentiate between *Salmonella Paratyphi A* and *Salmonella Paratyphi B*.⁽⁶⁾ The latter produces hydrogen sulphide, observed as browning of the medium, within 18-24 hours, whereas the former fails to produce hydrogen sulphide.

Principles of the Procedure

Lead Acetate Agar contains peptic digest of animal tissue, proteose peptone and dextrose all of which provide essential nutrients required for the growth of bacteria. Sulphur from sodium thiosulphate is utilized by bacteria for their metabolic activities to produce hydrogen sulphide. Lead acetate acts as an indicator of hydrogen sulphide production observed as browning of the medium. Dextrose is the fermentable carbohydrate source. Gas production from dextrose is indicated by the presence of bubbles in the butt.

Formula / Liter

Ingredients	Gms / Liter
Peptic digest of animal tissue	15.00
Proteose peptone	5.00
Dextrose	1.00
Lead acetate	0.20
Sodium thiosulphate	0.08
Agar	15.00
Final pH : 6.6 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 36.28 grams of the medium in one liter of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. Dispense into test tubes and autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. Allow the tubes to cool in a slanted position to obtain slants with generous butts.
5. Inoculate pure culture by surface streaking the slant and stabbing the butt.





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Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Medium amber coloured clear to slightly opalescent gel forms in tubes as slants
Reaction of 3.63% Solution	6.6 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

Expected Cultural Response : Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Sr. No.	Organisms	Results to be achieved			
		Inoculum (CFU)	Growth	Gas Production	H ₂ S Production
1.	<i>Escherichia coli ATCC 25922</i>	50-100	good-luxuriant	positive reaction	negative reaction
2.	<i>Enterobacter aerogenes ATCC 13048</i>	50-100	good-luxuriant	positive reaction	negative reaction
3.	<i>Salmonella Paratyphi A ATCC 9150</i>	50-100	good-luxuriant	negative reaction	negative reaction
4.	<i>Salmonella Paratyphi B ATCC 8759</i>	50-100	good-luxuriant	negative reaction	positive reaction, browning of the medium
5.	<i>Salmonella typhi ATCC 6539</i>	50-100	good-luxuriant	variable reaction	positive reaction, browning of the medium
6.	<i>Salmonella typhimurium ATCC 14028</i>	50-100	good-luxuriant	negative reaction	positive reaction, browning of the medium
7.	<i>Shigella dysenteriae ATCC 13313</i>	50-100	good-luxuriant	negative reaction	negative reaction
8.	<i>Shigella flexneri ATCC 12022</i>	50-100	good-luxuriant	negative reaction	negative reaction

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer appropriate references for specific test procedures.

Results

Refer appropriate references and test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.





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Packaging

Product Name : Lead Acetate Agar

Product Code : DM520

Available Pack sizes : 500gm

References

1. Balows A., Hausler W. J. Jr., Hermann K. L., Isenberg H. D., Shadomy H. J., (Eds.), Manual of Clinical Microbiology, 5th Ed., ASM, Washington, D.C.
2. Murray P. R., Baron J. H., Pfaller M. A., Tenover J. C. and Tenover F. C., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
3. Orłowski, 1897, Dissert, St. Petersburg.
4. Spray R. S., 1936, J. Bacteriol., 32:135.
5. Morrison L. E. and Tanner F. W., 1922, J. Bacteriol., 7:343.
6. Jordan E. O. and Victorson R., 1917, J. Infect. Dis., 21:554.

Further Information

For further information please contact your local MICROMASTER Representative.



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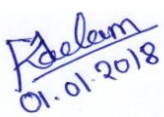


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