



PRODUCT SPECIFICATION SHEET

Sensitivity Test Medium (DM800)

Intended Use

Sensitivity Test Medium (DM800) is recommended for antibiotic susceptibility testing with sulphonamides and other antimicrobial agents.

Product Summary and Explanation

Sensitivity Test Medium is designed for use in sensitivity tests with sulphonamides and other antimicrobial agents, which would satisfy both diagnostic and susceptibility requirements.⁽¹⁾ Sensitivity testing has been used for several decades as a guide for antimicrobial therapy of serious infections. Such testing is most frequently performed when bactericidal antimicrobial agent therapy is considered necessary. It has also been used to ensure that the infecting organism is killed by (not tolerant to) the bactericidal compounds.

The diagnostic role in this medium is supported by the nutritional amino-acid base with glucose to encourage early growth. Long before the mechanisms of folate antagonism had been discovered, the addition of the bases adenine, guanine, uracil and xanthine were shown to improve the performance of the medium as an antimicrobial test medium.

An essential requirement for satisfactory antimicrobial susceptibility media is that the reactive levels of thymidine and thymine must be sufficiently reduced to avoid antagonism of trimethoprim and sulphonamides.⁽²⁾ This medium meets this requirement and in the presence of lysed horse blood (or defibrinated horse blood if the plates are stored long enough to allow some lysis of the erythrocytes) the level of thymidine will be further reduced. This is caused by the action of the enzyme *thymidine phosphorylase* which is released from lysed horse erythrocytes.⁽³⁾ Thymidine is an essential growth factor for thymidine-dependent organisms and they will not grow in its absence or they will grow poorly in media containing reduced levels.⁽⁴⁾

Principles of the Procedure

Sensitivity Test Medium contains proteose peptone which provides the nitrogenous nutrients to the organisms. Sodium acetate and veal infusion renders the medium to give better defined zones of inhibition in sensitivity plate tests. Addition of nucleoside bases supports the growth of common gram-positive and gram-negative organisms. Dextrose serves as the carbohydrate and energy source for many microorganisms. Disodium phosphate buffers the medium and sodium chloride helps to maintain to osmotic balance.

Formula / Liter

Ingredients	Gms / Litre
Proteose peptone	10.00
Veal, infusion from	10.00
Dextrose	10.00
Sodium chloride	3.00
Disodium phosphate	2.00
Sodium acetate	1.00
Adenine sulphate	0.01
Guanine	0.01
Uracil	0.01
Xanthine	0.01
Agar	15.00
Final pH: 7.3 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	





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Precautions

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

Directions

1. Suspend 51.04 grams of the medium in one liter of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Sterilize by autoclaving at 118-121°C for 15 minutes.
4. Cool to 50°C and add sterile serum or blood aseptically if desired.
5. Mix well and pour into sterile Petri plates.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Yellow coloured clear to slightly opalescent gel forms in Petri plates
Reaction of 5.1% Solution	pH 7.3 ± 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	Recovery
1.	<i>Escherichia coli</i> ATCC 25922	50-100	good- luxuriant	≥70%
2.	<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	good- luxuriant	≥70%
3.	<i>Bacillus subtilis</i> ATCC 6633	50-100	good- luxuriant	≥70%
4.	<i>Staphylococcus aureus</i> ATCC 25923	50-100	good- luxuriant	≥70%
5.	<i>Enterococcus faecalis</i> ATCC 29212	50-100	good- luxuriant	≥70%

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

Test Procedure

Refer to appropriate references for standard test procedures.

Results

Refer to appropriate references and standard 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.





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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.

Packaging

Product Name : Sensitivity Test Medium

Product Code : DM800

Available Pack sizes : 500gm

References

1. Atlas R.M., 1993, Handbook of Microbiological Media, CRC Press, Inc., Boca Raton.
2. Ferone R., Bushby S. R. M., Burchall J.J., Moore W.D. and Smith D. (1975) Antimicrob. Agents Chemotherap. 7. 91-98.
3. Ferguson R. W. and Weissfeld A. S. (1984) J. Clin. Microbiol. 19. 85-86.
4. Stokes E. J. and Ridgway G. L. (1980) 'Clinical Bacteriology' 5th Edn. Arnold. London. p.54.

Further Information

For further information please contact your local MICROMASTER Representative.



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