



PRODUCT SPECIFICATION SHEET

Dextrose Starch Agar (DM084)

Intended Use

Dextrose Starch Agar (DM084) is recommended for propagation of pure cultures of *Neisseria gonorrhoea* and other fastidious organisms.

Product Summary and Explanation

Neisseria is a large group of gram-negative proteobacteria. *Neisseria meningitidis*, the causative agent of meningitis, is responsible for a large amount of morbidity and mortality throughout the world, while *Neisseria gonorrhoeae* is the causative agent of the sexually transmitted disease gonorrhoea that is second in cases reported only to chlamydia (CDC). These fastidious organisms can be cultivated on Dextrose Starch Agar.

Dextrose Starch Agar was used by Wilkins, Lewis and Barbiers⁽¹⁾ in an agar dilution procedure to test the activity of antibiotics against *Neisseria* species. The medium is highly nutritious and supports the luxuriant growth of various fastidious organisms like *N. meningitidis*, *Streptococcus pyogenes* and *Streptococcus pneumoniae* without the need of supplementation with additives. *N. meningitidis* grow luxuriantly on this medium, when the plates are kept in 4-6% CO₂ environment or in the presence of abundant moisture. Organisms lacking the ability of starch hydrolysis can be maintained on this medium. However when used as a stock culture agar for maintenance, the medium should be taken in half concentrations. Organism capable of hydrolyzing starch will create acidic conditions thereby making it unsuitable for maintenance. Swancara⁽²⁾ has described a method of obtaining partial carbon dioxide tension and this can be used for incubation of Dextrose Starch Agar plates inoculated with *N. meningitidis*.

Principles of the Procedure

Dextrose Starch Agar contains proteose peptone and gelatine which provide the nitrogen, vitamins and amino acids essential for microbial growth. Dextrose serves as the carbon and energy source. Starch neutralizes toxic fatty acids that may be present in the agar. Sodium chloride maintains the osmotic balance and disodium phosphate is the buffering agent.

Formula / Liter

Ingredients	Gms / Liter
Proteose peptone	15.00
Dextrose	2.00
Starch, soluble	10.00
Sodium chloride	5.00
Disodium phosphate	3.00
Gelatin	20.00
Agar	10.00
Final pH: 7.3 ± 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 65 grams of the medium in one liter of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. Dispense in tubes.
4. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.





PRODUCT SPECIFICATION SHEET

5. Cool the tubed medium in slanting position.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Light amber coloured, opalescent gel with flocculent precipitate forms in tubes as slants
Reaction of 6.5% solution	pH 7.3 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.0% Agar gel and 2.0% gelatin

Expected Cultural Response: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours in an anaerobic conditions.

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	<i>Neisseria gonorrhoeae</i> ATCC 19424	50-100	good-luxuriant
2.	<i>Neisseria meningitidis</i> ATCC 13090	50-100	good-luxuriant
3.	<i>Streptococcus pneumonia</i> ATCC 6303	50-100	good-luxuriant
4.	<i>Streptococcus pyogenes</i> ATCC 19615	50-100	good-luxuriant

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

Test Procedure

Refer to the procedures described in *Clinical Microbiology Procedures Handbook* and *Manual of Clinical Microbiology*, for a complete discussion of the isolation and identification of *N. gonorrhoeae* and other fastidious pathogens.

Results

Refer to appropriate references and specific test procedures.

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. Dextrose Starch Agar prepared in half strength is a good medium for maintaining stock cultures of gonococci.
2. This medium is not recommended for isolation of gonococci from mixed cultures.
3. The medium normally contains a flocculent precipitate, which does not affect the nutritive value of the medium.
4. It is necessary to have the incubation atmosphere saturated with moisture while cultivating gonococci. Suitable conditions can be achieved, if the plates are incubated in a closed container containing cotton saturated with water. Best results are obtained on a solid medium with a moist surface.

Packaging

Product Name : Dextrose Starch Agar

Product Code : DM084

Available Pack sizes : 500gm

References

1. Wilkins, Lewis and Barbiere, 1956, *Antibiot. Chemother.*, 6:149.
2. Swancara, 1948, *Am. J. Med. Tech.*, 14:214.





PRODUCT SPECIFICATION SHEET

Further Information

For further information please contact your local MICROMASTER Representative.



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DM084PSS,QAD/FR/024,Rev.00

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