



PRODUCT SPECIFICATION SHEET

Actinomycete Isolation Agar (DM738)

Intended Use

Actinomycete Isolation Agar (DM738) is recommended for isolation and enumeration of *Actinomycetes* from soil and water.

Product Summary and Explanation

Actinomycetes are gram-positive bacteria, which show marked chemical and morphological diversity but form a distinct evolutionary line of organisms that range from coccoid and pleomorphic forms to branched filaments.⁽¹⁾ Although some genera are important to human medicine, most of the actinomycetes are part of the indigenous flora of soil, water and vegetation. *Actinomycete* development leads to the formation of volatile metabolites.⁽²⁾ Traces of these volatile metabolites are sufficient to impart disagreeable odour to water or a muddy flavour to fish.⁽³⁾ Actinomycetes can cause massive growths which will form a thick foam in the activated sludge process, causing a disruption in wastewater treatment.^(4,5) Olsen formulated Actinomycete Isolation Agar for isolating and cultivating actinomycetes from soil and water. The formula is supplemented with glycerol, a highly purified fermentable alcohol used occasionally for differentiating certain bacteria and in media for isolating and culturing fastidious bacteria.⁽⁶⁾

Principles of the Procedure

Actinomycete Isolation Agar contains sodium caseinate as nitrogen source. Asparagine in addition to being an amino acid is also a source of organic nitrogen. Sodium propionate is used as a substrate in anaerobic fermentation. Dipotassium phosphate provides buffering capability to maintain pH balance. Magnesium sulphate and ferrous sulfate provide sources of sulfates and metallic ions. Glycerol serves as an additional source of carbon.

Formula / Liter

Ingredients	Gms / Liter
Sodium caseinate	2.00
L-Asparagine	0.10
Sodium propionate	4.00
Dipotassium phosphate	0.50
Magnesium sulphate	0.10
Ferrous sulphate	0.001
Agar	15.00
Final pH: 8.1 ± 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 21.7 grams of the medium in one liter of distilled water containing 5 ml glycerol.
2. Heat to boiling, to dissolve the medium completely.
3. Dispense as desired.
4. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Yellow to light amber coloured opalescent gel forms in Petri plates
Reaction of 2.2% Solution	pH : 8.1 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel



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Expected Cultural Response: Cultural characteristics observed after an incubation at 35-37°C for 40-72 hours.

Sr. No.	Organisms	Results to be achieved
		Growth
1.	<i>Nocardia asteroides ATCC 19427</i>	good-luxuriant
2.	<i>Escherichia coli ATCC 25922</i>	inhibited
3.	<i>Streptomyces albus subsp albus ATCC 3004</i>	good-luxuriant
4.	<i>Streptomyces lavendulae ATCC 19247</i>	good-luxuriant

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

Test Procedure

1. Inoculate the plates with 1 drop of diluted culture or specimen and spread over the surface using a sterile bent glass rod.
2. Incubate at 35-37°C for 40-72 hours.
3. The media can be used for long term storage after sufficient growth is obtained. Agar slants are used for maintenance of cultures over a shorter period of time.
4. 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.

Packaging

Product Name : Actinomycete Isolation Agar

Product Code : DM738

Available Pack sizes : 500gm

References

1. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1996, 14th Edition, Churchill Livingstone.
2. Adams B. A., 1929, Water and Water Eng., 31:327.
3. 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.
4. Lechevalier H. A., 1975, Environ. Protection Technol. Ser., EPA-600/ 2-75-031, U. S. Environmental Protection Agency, Cincinnati, Ohio.
5. Lechevalier M. P., and Lechevalier H. A., 1974, Int. J. Syst.Bacteriol., 24:278.
6. Olsen, 1960, Personal Communication.



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Further Information

For further information please contact your local MICROMASTER Representative.



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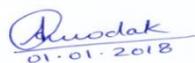
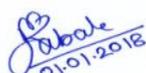
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