

PRODUCT SPECIFICATION SHEET

Aeromonas Isolation Medium Base (DM008)

Intended Use

Aeromonas Isolation Medium Base (DM008) is recommended for selective isolation and differentiation of *Aeromonas hydrophila* from clinical and environmental specimens.

Product Summary and Explanation

Aeromonas spp occur widely in soil and water, where they cause diseases in fish and amphibians. They also occur in untreated and chlorinated drinking water, raw foods and raw milk.^(1,2) It is observed that the major cause of gastrointestinal infections by *Aeromonas* species^(2,3) is caused by ingestion of infected water.^(4,5) Aeromonas Isolation Medium Base therefore, may be considered as a useful diagnostic aid for investigating diarrhoeal disease.^(6,14) Aeromonas medium was found to be superior over some other formulae for detection of *Aeromonas* species in tap water, bottled water and foods including meat, poultry, fish and seafood.⁽⁷⁻⁹⁾ Ryan⁽¹⁰⁾ modified the formulation of XLD Medium so that it would support the growth of *Aeromonas spp* and *Plesiomonas spp* as well as the usual enterobacteriaceae. It could therefore be used as a universal medium in the investigation of enteric disease. However, to improve its performance in the isolation of aeromonads, the addition of ampicillin (MS001) at 5mg/l is recommended. The effectiveness of Ampicillin as a selective agent has been reported by several workers.⁽¹¹⁻¹⁴⁾

The role of these organisms in gastrointestinal disease is still subject to debate but a rapidly expanding body of literature suggests that *Aeromonas spp* can cause a wide spectrum of enteric symptoms in adults as well as children. It would therefore be a useful diagnostic aid to include this selective medium when investigating diarrhoeal disease. It was noted that the recovery of *Aeromonas* species was very low from fresh foods of animal origin when cultivated on clinical media. Also difficulties were encountered in distinguishing the *Aeromonas hydrophila* group from the background microflora. Aeromonas Medium (Ryan) is specified by the MAFF/DHS Steering Group on the Microbiological Safety of Food for detection and enumeration of *Aeromonas hydrophila* in clinical specimens.^(1,2) Polumbo et al formulated Starch Ampicillin (SA) Agar with starch hydrolysis as the differential trait and ampicillin to suppress the background microflora.⁽¹⁵⁾

Principles of the Procedure

Aeromonas Isolation Medium Base contains peptone special and yeast extract which provides essential nitrogenous compounds required for growth. The salts provide the essential minerals and electrolytes. Sodium chloride helps to maintain the osmotic equilibrium. Lactose, sorbose, inositol and xylose are sources of carbon and energy. Ampicillin, bile salts and sodium thioglycollate makes the medium selective. Bromothymol blue and thymol blue acts as indicators giving the characteristic colony colour.

Formula / Liter

Ingredients	Gms / Liter
Peptone, special	5.00
Yeast extract	3.00
L-Lysine hydrochloride	3.50
L-Arginine hydrochloride	2.00
Inositol	2.50
Lactose	1.50
Sorbose	3.00
Xylose	3.75
Bile salts	3.00
Sodium thiosulphate	10.67
Sodium chloride	5.00
Ferric ammonium citrate	0.80
Bromo thymol blue	0.04
Thymol blue	0.04
Agar	12.50
Final pH: 8.0 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

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

Directions

1. Suspend 28.15 grams of the medium in 500 ml of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. DO NOT AUTOCLAVE.
4. Cool to 45-50°C and aseptically add rehydrated contents of 1 vial of Aeromonas Selective Supplement (MS001).
5. Mix well and pour into sterile Petri plates.

Quality Control Specifications

Dehydrated Appearance	Light yellow to light tan homogeneous free flowing powder
Prepared Medium	Dark green coloured clear to slightly opalescent gel forms in Petri plates
Reaction of 5.63% Solution	pH : 8.0 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.25% Agar gel

Expected Cultural Response : Cultural characteristics observed with added Aeromonas Selective Supplement (MS001) after an incubation at 35-37°C for 18-24 hours.

Sr. No.	Organisms	Results to be achieved			
		Inoculum (CFU)	Growth	Recovery	Colony Characteristics
1.	<i>Aeromonas hydrophila</i> ATCC 7966	50-100	good-luxuriant	≥50%	dark green, opaque with dark centre
2.	<i>Escherichia coli</i> ATCC 25922	≥10 ³	inhibited	0%	--
3.	<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	good-luxuriant	≥50%	blue/grey, translucent pinpoint
4.	<i>Salmonella Typhi</i> ATCC 6539	≥10 ³	inhibited	0%	--
5.	<i>Shigella flexneri</i> ATCC 12022	≥10 ³	inhibited	0%	--

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

Test Procedure

1. Inoculate the plates with a suspension of food, faeces etc., diluted to form single colonies on the inoculated plate.
2. Incubate the plates aerobically at 30±35°C for 24 hours. If further incubation is required hold at room temperature (22±25°C).
3. Examine the plates for the presence of dark green, opaque colonies with darker centres. Confirm the identity with biochemical tests.
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. Although *Aeromonas* and *Plesiomonas* spp will grow on the medium if ampicillin is omitted, it will be more difficult to distinguish them from the other organisms present on the plate. Suspected colonies of *Aeromonas* spp must be confirmed by biochemical tests.

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

Packaging

Product Name : Aeromonas Isolation Medium Base

Product Code : DM008

Available Pack sizes : 500gm

References

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Further Information

For further information please contact your local MICROMASTER Representative.



MICROMASTER LABORATORIES PRIVATE LIMITED

DM008PSS, QAD/FR/024, Rev.00

Unit 38/39, Kalpataru Industrial Estate,
Off G.B. Road, Near 'R-Mall', Thane (W) - 400607. M.S. INDIA.
Ph: +91-9320126789/9833630009/9819991103
Email: sales@micromasterlab.com

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