



PRODUCT SPECIFICATION SHEET

Anaerobic Thioglycollate Medium Base (DM1023)

Intended Use

Anaerobic Thioglycollate Medium Base (DM1023) is recommended for the cultivation of anaerobes.

Product Summary and Explanation

The importance of anaerobic microorganisms as pathogenic agents responsible for infectious diseases and the role they play in the microbial spoilage of food have been better appreciated since past few years. One of the major causes of food poisoning or gastrointestinal illnesses is the clostridial species. Anaerobic microorganisms have long been known as constituents of the normal bacterial flora of human and animals. Both their pathogenic significance in medicine and their important role in food hygiene have, however, long been underestimated.

Caseltz and Freitag described the Anaerobic Thioglycollate Medium for the cultivation of anaerobes.⁽¹⁾ Anaerobes, which are very particular in regard to the nutrient quality of the substrate, grow very well in this medium. In determining the resistance of anaerobes to various antibiotics in the serial dilution procedure, it has been proven valuable.⁽²⁾

Principles of the Procedure

Anaerobic Thioglycollate Medium Base contains casein enzymic hydrolysate, papaic digest of soyabean meal, meat extract and liver hydrolysate which provides nitrogen, carbon and other nutrients necessary to support bacterial growth. Glucose is the fermentable carbohydrate source. Sodium chloride maintains osmotic balance of the medium by supplying essential ions. The small amount of agar helps in anaerobiosis. Sodium thioglycollate and L-cysteine act as reducing agents and maintain a low oxygen tension in the medium which enables multiplication of the obligate anaerobes.

Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	17.00
Papaic digest of soyabean meal	3.00
Meat extract	7.50
Liver hydrolysate	3.00
D-Glucose	6.00
Sodium chloride	2.50
Sodium thioglycollate	0.50
L-Cysteine	0.25
Sodium sulphite	0.10
Agar	0.70
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 40.55 grams of the medium in 900 ml of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. Cool to 45-50°C. Add 100 ml sterile serum.
5. Mix well and dispense into sterile test tubes under sterile conditions



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6. Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Amber to dark amber coloured clear to slightly opalescent gel
Reaction of 4.05% solution	pH 7.3 ± 0.2 at 25°C
Gel Strength	Semisolid, comparable with 0.07% Agar gel

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

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant
2.	<i>Bacteroides fragilis</i> ATCC 25285	50-100	good-luxuriant
3.	<i>Bacteroides fragilis</i> ATCC 25285	50-100	fair
4.	<i>Clostridium perfringens</i> ATCC 13124	50-100	good-luxuriant
5.	<i>Clostridium sporogenes</i> ATCC 11437	50-100	good-luxuriant
6.	<i>Clostridium septicum</i> ATCC 12464	50-100	good-luxuriant

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

Test Procedure

1. For determining the resistance of anaerobes to various antibiotics, aliquot 4.8 ml of the medium into sterile test tubes containing 0.1ml of serially diluted antibiotic.
2. Inoculate these tubes with 0.1ml of an adjusted suspension of pure culture of the test bacteria.
3. The lowest antibiotic concentration, which shows no visible growth, is taken as the minimum inhibitory concentration (MIC) of the antibiotic.
4. 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 2 - 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 : Anaerobic Thioglycollate Medium Base

Product Code : DM1023

Available Pack sizes : 500gm



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References

1. Caselitz F. H, u. Freitag V., 1969, Arztl. Lab., 15; 426-430.
2. Caselitz F. H, u. Freitag V., 1970, Arztl. Lab., 16; 165-170.

Further Information

For further information please contact your local MICROMASTER Representative.



MICROMASTER LABORATORIES PRIVATE LIMITED

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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