



PRODUCT SPECIFICATION SHEET

Tetrathionate Brilliant Green Bile Broth (DM712)

Intended Use

Tetrathionate Brilliant Green Bile Broth (DM712) is recommended for isolation and identification of *Salmonellae*.

Product Summary and Explanation

Salmonella are gram-negative, facultatively anaerobic, non-sporulating, non-motile rods in the family *Enterobacteriaceae*. They are widely distributed in animals affecting mainly the stomach and the intestines. These organisms are difficult to differentiate biochemically from *Escherichia coli*. Mueller⁽¹⁾ first described Tetrathionate Broth, which was later modified by Kauffman.^(2, 3) Tetrathionate Brilliant Green Bile Broth is used as an enrichment medium for *Salmonella*. Enrichment broth is usually recommended to facilitate the recovery of small numbers of *Salmonella* species.⁽⁴⁾ Tetrathionate Brilliant Green Bile Broth is also described in the DAB, the European and Indian Pharmacopoeia⁽⁵⁻⁷⁾ for the selective enrichment of *Salmonella* from foods, water and other samples.

Principles of the Procedure

Tetrathionate Brilliant Green Bile Broth contains peptic digest of animal tissue which provides nitrogenous nutrients for growth of *Salmonellae*. Brilliant green and ox-bile inhibit both gram-positive as well as some selected gram-negative organisms. They also prevent the growth of the anaerobic lactose fermenters such as *Clostridium perfringens*, which could give false positive reactions at 44°C. Potassium tetrathionate inhibits normal flora of faecal specimens. Organisms that have the enzyme tetrathionate reductase will grow and multiply in this medium due to the presence of Potassium tetrathionate. Calcium carbonate buffers sulfuric acid produced on reduction of tetrathionate. Sodium chloride helps in maintaining osmotic equilibrium.

Formula / Liter

Ingredients	Gms / Liter
Peptic digest of animal tissue	8.60
Ox bile	8.00
Sodium chloride	6.40
Calcium carbonate	20.00
Potassium tetrathionate	20.00
Brilliant green	0.07
Final pH: 7.0 ± 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 63.07 grams of the medium in one liter of distilled water.
2. Heat just to boiling.
3. Mix well and distribute into final containers.
4. DO NOT AUTOCLAVE OR REHEAT.
5. Due to the presence of calcium carbonate, the prepared medium forms opalescent solution with white precipitate.

Quality Control Specifications

Dehydrated Appearance	Light yellow to pale green homogeneous free flowing powder
Prepared Medium	Bluish green coloured opalescent solution with white precipitate.
Reaction of 6.3% Solution	pH : 7.0 ± 0.2 at 25°C
Gel Strength	Not Applicable





PRODUCT SPECIFICATION SHEET

Expected Cultural Response: Cultural characteristics observed when subcultured on MacConkey Agar (DM143) after an incubation at 35-37°C for 18-24 hours.

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth	Colour of colony
1.	<i>Escherichia coli</i> ATCC 25922	50 -100	Fair	pink to red with bile precipitate
2.	<i>Salmonella Typhi</i> ATCC 6539	50 -100	good-luxuriant	Colourless
3.	<i>Salmonella Typhimurium</i> ATCC 14028	50 -100	good-luxuriant	Colourless
4.	<i>Salmonella Enteritidis</i> ATCC 13076	50 -100	good-luxuriant	Colourless
5.	<i>Staphylococcus aureus</i> ATCC 25923	$\geq 10^3$	inhibited	--
6.	<i>Staphylococcus aureus</i> ATCC 6538	$\geq 10^3$	inhibited	--
7.	<i>Escherichia coli</i> ATCC 8739	50-100	Fair	pink to red with bile precipitate
8.	<i>Escherichia coli</i> NCTC 9002	50-100	Fair	pink to red with bile precipitate
9.	<i>Staphylococcus aureus</i> NCIMB 9518	$\geq 10^3$	inhibited	--

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

Test Procedure

1. Enrich the sample in a suitable enrichment medium.
2. Inoculate the pre-enriched culture in an appropriate amount of tetrathionate brilliant green broth and incubate for 18-24 hours at 35-37°C. (selective enrichment).
3. Further streak onto differential medium for isolation and identification.

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. Tetrathionate Brilliant Green Bile Broth is not suitable for growth of *Salmonella typhi* and *Salmonella paratyphi*.
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 : Tetrathionate Brilliant Green Bile Broth

Product Code : DM712

Available Pack sizes : 500gm

References

1. Mueller L., 1923, C. R. Soc. Biol., (Paris), 89, 434.
2. Kauffman F., 1930, Hyg. Abt. I. Orig., 113, 148.
3. Kauffman F., 1935, Z. Hyg. Infektionskr., 117, 26.
4. Murray P. R., Baron J. H., Pfaller M. A., Tenover J. C. and Tenover F. C., (Ed.). 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
5. European Pharmacopeia II, Kapitel VIII, 10
6. Deutsches Arzneibuch (DAB), 10. Auflage, Kapitel VIII, 10





PRODUCT SPECIFICATION SHEET

7. Indian Pharmacopeia, Vol. II, Published by the Controller of Publications, New Dehli, Government of India, Ministry of Health and Family Welfare (1996)

Further Information

For further information please contact your local MICROMASTER Representative.



MICROMASTER LABORATORIES PRIVATE LIMITED

DM712P55QAD/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

Disclaimer :

All Products conform exclusively to the information contained in this and other related Micromaster Publications. Users must ensure that the product(s) is appropriate for their application, prior to use. The information published in this publication is based on research and development work carried out in our laboratory and is to the best of our knowledge true and accurate. Micromaster Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are intended for laboratory, diagnostic, research or further manufacturing use only and not for human or animal or therapeutic use, unless otherwise specified. Statements included herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.

