Mueller Kauffmann Tetrathionate Broth Base (Novobiocin Broth)

Intended Use
Mueller Kauffman Tetrathionate Broth Base is used for improved enrichment and isolation of Salmonellae.

Summary
Mueller recommended Tetrathionate Broth as a selective medium for the isolation of *Salmonella*. Kauffman modified the formula to include ox bile and brilliant green as selective agents to suppress bacteria such as *Proteus* species. The British Standard Specification specifies Brilliant Green Tetrathionate Broth for isolating *Salmonella* from meat and meat products and from poultry and poultry products. It is also a recommended selective broth for isolating *Salmonella* from animal feces and sewage polluted water. Selectivity is conferred by tetrathionate (from the reaction of thiosulphate and iodine). Using more than one selective broth increases the isolation of *Salmonella* from samples with multiple serotypes.

Principle
Mueller Kauffman Tetrathionate Novobiocin Broth Base contains casein enzymic hydrolysate and peptic digest of animal tissue as sources of carbon, nitrogen, vitamins and minerals. Ox bile and added brilliant green are selective agents, which inhibit Gram-positive and other Gram-negative organisms. Calcium carbonate is the buffer. Sodium chloride maintains osmotic equilibrium. Sodium thiosulphate is a source of sulfur.

Formula*

Ingredients	**g/L**
Peptic Digest of Animal Tissue	4.3
Casein Enzymic Hydrolysate	8.6
Ox Bile	4.75
Sodium Chloride	2.6
Calcium Carbonate	38.7
Sodium Thiosulphate, Pentahydrate	47.8
Brilliant Green	0.0095
Final pH (at 25°C)	8.2 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of Specimen
Water and Waste Water samples; Food and Dairy samples

Specimen Collection and Handling
Ensure that all samples are properly labelled. Follow appropriate techniques for handling samples as per established guidelines. Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure. The samples must be stored and tested within the permissible time duration. After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 89.42 g of dehydrated powder in 1000 mL purified / distilled water, Heat the medium just to boiling. DONOT AUTOCLAVE.
2. Cool to 45°C-50°C before adding supplements.
3. Immediately before use aseptically add 20 mL of an iodine solution prepared by dissolving 20 g of iodine and 25.00 g of potassium iodide in 100 mL sterile water along with rehydrated contents of MKTT Novabiocin Supplement (204131390005)
4. Mix well and dispense into sterile tubes.

Quality Control

Dehydrated Appearance: Cream to greenish yellow homogeneous free flowing powder.
Prepared Appearance: Light green coloured opalescent solution forms with heavy white precipitate.
Cultural Response: Cultural characteristics observed after an incubation at 43°C for 18-48 hours with added 20 mL iodine solution and MKTT Novobiocin Supplement, when subcultured on Soyabean Casein Digest Agar.

Organism (ATCC)	Growth
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good
Escherichia coli (25922)	Partial Inhibition
Proteus mirabilis (25933)	Partial Inhibition
Shigella flexneri serotype 2b (12022)	Inhibited

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Precautions / Limitations

1. The complete medium is unstable and should be used immediately. It may be stored at 2°C-8°C in the dark for no more than 7 days.
2. Organisms other than *Salmonellae*, such as *Morganella morganii* and some *Enterobacteriaceae* may grow in the medium. Therefore, confirmatory tests should be carried out on all presumptive *Salmonella* colonies that are recovered.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Mueller L., 1923, C. R. Soc. Biol., (Paris) 89:434.
2. Kauffman F., 1935, Ztschr. F. Hyg., 117:26.
3. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201130700100	Dehydrated Culture Media	100 g
201130700500	Dehydrated Culture Media	500 g