TM 2143 – KAUFFMAN MULLER'S TETRATHIONATE BROTH BASE (IS:5887(Part I)-1999)

INTENDED USE

Recommended as selective enrichment medium for isolation of *Shigella* species from food samples.

PRODUCT SUMMARY AND EXPLANATION

Salmonella species cause many types of infections, from mild self-limiting gastroenteritis to life-threatening typhoid fever. *Salmonella* present in food samples may also be injured in food-processing procedures, which include exposure to low temperatures, sub-marginal heat, drying, radiation, preservative, and sanitizers. This medium is hence used as a selective enrichment for the cultivation of *Salmonella* species that may be present in small numbers and have been injured through various procedures. Muller recommended Tetrathionate Broth as a selective medium for the recovery of *Salmonella* and demonstrated the effectiveness of Tetrathionate Broth for enriching typhoid and paratyphoid bacilli while inhibiting coliform organisms. Kauffmann modified this formula to include Ox bile for its selective properties, which supresses coliform bacteria and inhibits Gram-positive organisms. Using modified Muller's broth, Kauffmann increased the number of rapid screening of *Salmonella* in food.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	9.000
Meat extract	9.000
Sodium chloride	4.500
Calcium carbonate	50.000
Sodium thiosulphate	50.000
Oxbile	10.000

PRINCIPLE

The medium consists of Meat extract, Peptone which provides nitrogen, carbon, vitamins, and amino acids. Sodium Chloride maintains the osmotic balance of the medium. Calcium Carbonate neutralizes and absorbs toxic metabolites. Selectivity is accomplished by the combination of Sodium Thiosulfate and tetrathionate, which suppresses commensal intestinal organisms. The British Standard Specification specifies Brilliant Green Tetrathionate Broth for isolating *Salmonella* from meat and meat products and from poultry and poultry products. Muller Kauffmann Tetrathionate Broth Base conforms with ISO Standards.

INSTRUCTION FOR USE

- Dissolve 132.5 grams in 1000 ml distilled water.
- Heat just to boiling to dissolve the medium. DO NOT AUTOCLAVE.
- Cool and just before use aseptically add 20 ml of iodine solution. (4 grams iodine and 5 gram Potassium iodide in 20 ml sterile distilled water) and 10 ml of 0.1 % Brilliant green solution.
- Mix well before dispensing in the sterile tubes to disperse Calcium carbonate uniformly.
  Note: Due to presence of Calcium carbonate the prepared medium forms opalescent solution with white precipitate.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.

Appearance of prepared medium : With added brilliant green and iodine solution - Light green coloured opalescent solution forms with heavy white precipitate.

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Incubation temperature	Incubation Period
Salmonella Typhimurium	14028	50-100	Luxuriant	43°C	18-24 Hours
Salmonella Enteritidis	13076	10-100	Luxuriant	43°C	18-24 Hours
Salmonella Paratyphi A	-	50-100	Luxuriant	43°C	18-24 Hours
Salmonella Paratyphi B	-	50-100	Luxuriant	43°C	18-24 Hours
Salmonella Typhi	6539	>=10^3	Inhibited	43°C	18-24 Hours
Escherichia coli	25922	50-100	None-poor	43°C	18-24 Hours
Proteus vulgaris	13315	50-100	None-poor	43°C	18-24 Hours
Shigella flexneri	12022	50-100	Good	43°C	18-24 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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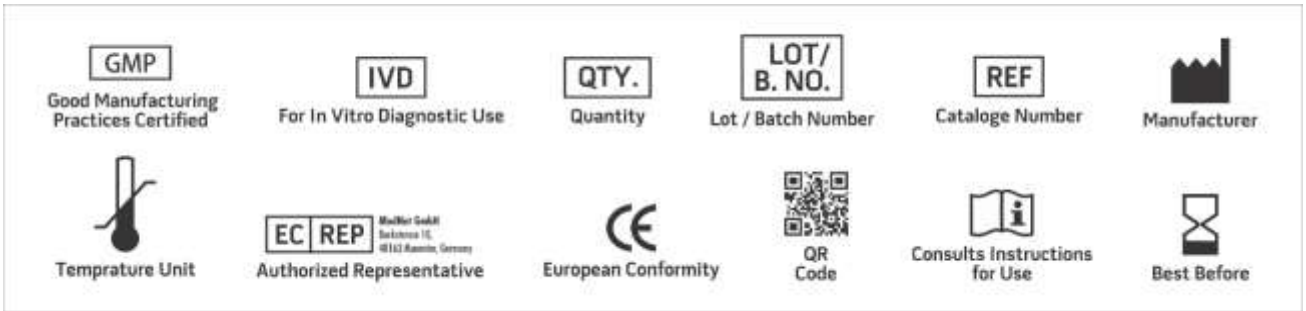

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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