

# TM 2179 - M-BISMUTH SULPHITE BROTH

#### **INTENDED USE**

For the detection of Salmonellae by the membrane filter technique.

#### PRODUCT SUMMARY AND EXPLANATION

Salmonella is a gram-negative, non-sporulation, facultative anaerobic, non-motile rod in the family Enterobacteriaceae. They are widely distributed in animals causing diseases mainly in stomach and the intestines. It is difficult to differentiate these organisms biochemically from Escherichia coli. Clark et al formulated M-Bismuth Sulphite Broth and recommend for detection of Salmonella Typhi by the membrane filtration technique from water and various clinical specimens. Preliminary enrichment on a non-selective medium is not necessary. M-Bismuth Sulphite Broth share same composition with Bismuth Sulphite Agar except Agar. All the constituents are in double concentration in the broth medium.

### **COMPOSITION**

Ingredients	Gms / Ltr		
Dextrose	10.000		
Beef Extract	10.000		
Ferrous sulphate	0.600		
Brilliant Green	0.050		
Disodium Phosphate	8.000		
Bismuth sulphate indicator	16.000		
Peptic digest of animal tissue	20.000		

#### **PRINCIPLE**

Essential growth nutrients provided by peptic digest of animal tissue, dextrose and beef extract. H2S indicators act by ferrous sulphate and bismuth sulphite indicator together. Brilliant green acts as selective agent after 30 hour's incubation at 35°C luxuriant growth of *Salmonella* Typhi is obtained but metallic sheen and brown-black halo is not developed before 40 hours. The medium importance relies on membrane filter technique for the detection of *Salmonella Typhi*.

# **INSTRUCTION FOR USE**

- Dissolve 64.65 grams in 1000ml distill water.
- Heat the medium to dissolve completely if necessary. Excessive heating can destroy selective properties of the medium. Do not Autoclave
- The medium contains flocculent precipitate that should be dispersed evenly by swirling the flask just before use.
- Cool at 35°C and saturate sterile absorbent cotton pad with 2ml of the broth.
- The medium should be used 24 hours of rehydration.

# **QUALITY CONTROL SPECIFICATIONS**

Appearance of Powder : Light yellow to greenish yellow homogeneous free flowing powder

Appearance of prepared medium : Greenish yellow colored opalescent solution with flocculent precipitate

**pH (at 25°C)** :  $7.7 \pm 0.2$ 

### **INTERPRETATION**

Cultural characteristics observed in humid atmosphere, after an incubation.









Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Color of the colony(on membrane filter)	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	None- poor	0-10%	Brown green, if any	35-37°C	40-48 hours
<i>Salmonella</i> Typhi	6539	50-100	Luxuriant	>=70%	Black with metallic sheen	35-37°C	40-48 hours
Salmonella Typhimurium	14028	50-100	Luxuriant	>=70%	Black with metallic sheen	35-37°C	40-48 hours
Staphylococcus aureus	25923	>=10³	Inhibited	>=70%	-	35-37°C	40-48 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.

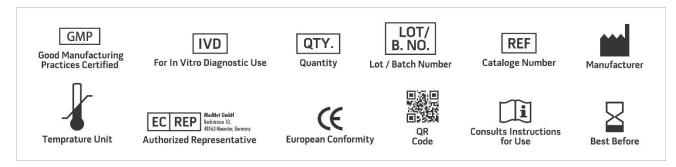
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

### **DISPOSAL**

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

# **REFERENCES**

- 1. Clark H. F., Geldreich E. E., Jeter M. L. and Kabler P. W., 1951, Pub I. Hlth. Reports, 66:951.
- 2. Goets A. and Tsuneishi N., 1951, J. Am. Water Works Assoc., 43:943.
- 3. Goets A. and Tsuneishi N., 1952, J. Am. Water Works Assoc., 44:471.
- 4. Goets A. and Tsuneishi N., 1953, J. Am. Water Works Assoc., 45 and 1196.
- 5. MacFaddin J. F., 1985, Media for Isolation-Identification-Cultivation-Maintenance of Medical Bacteria, Vol. I, Williamsand Wilkins, Baltimore.R.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices. \*For Lab Use Only

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