

TM 2176 - M-BROTH

INTENDED USE

For detecting Salmonellae in foods and feeds by the accelerated enrichment serology procedures.

PRODUCT SUMMARY AND EXPLANATION

Salmonella is facultative anaerobic gram negative bacilli with its typical characteristic oxidase and lactose negative, H₂S positive with production of gas. *Salmonella* resides in intestinal tract of many animals which includes both wild and domestic. Diseases caused by *Salmonella* in human called Salmonellosis, that includes bacteremia (enteric fever), diarrheal diseases. The severity of diarrheal diseases is directly proportional to virulence of the strain and state of human source. Agglutination test is one of the serological test which used in the diagnosis to confirm identification.

Sperber and Diebel developed M-broth which accelerated the detection of the *Salmonella*. It functions of providing nutrients and flagella development. The accelerated 50- hour detection includes 18 hours' pre-enrichment, 24 hours' selective enrichment, 6-8 hours' selective enrichment and 2 hours of serological testing. In selective enrichment step Sperber and Diebel has modifies APT Broth by removing dextrose and adding mannose to avoid nonspecific binding. Fantasia et al discovered that enrichment serology method is rapid and less complicated than Bacteriological Analytical Manual to perform. It maintains the sensitivity and accuracy. For isolation and identification of food-borne *Salmonella*, M-Broth conforms the testing standards which is recommended by the APHA for isolation and identification of foodborne *Salmonella*.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	12.500
Yeast extract	5.000
D-Mannose	2.000
Sodium citrate	5.000
Sodium chloride	5.000
Ferrous sulphate	0.040
Dipotassium hydrogen phosphate	5.000
Polysorbate-80 (tween 80)	0.750
Manganese chloride	0.140
Magnesium sulphate	0.800

PRINCIPLE

Organic nitrogen, sulphur, vitamins, carbon, nitrogen provided by the Tryptone and yeast extract, which supports the growth of *Salmonella*. Sodium chloride maintains the osmotic balance. Mannose act as fermentable sugar and energy source, this function prevents the fimbrial agglutination of *Salmonella*. Polysorbate 80 supplies fatty acid, bacterial growth stimulated by the inorganic salts. Dipotassium hydrogen sulphate acts as buffer.

10% suspension is prepared from the sample, which is further prepared in sterile Lactose Broth and incubation temperature is 35±2°C for 18-24 hours. 9ml of Tetrathionate Broth Selenite Cystine broth is added with 1ml of pre-enriched culture. The enriched culture is inoculated in M-Broth subsequently and incubated at 35±2°C for 6-8 hours followed by the H-agglutination test as per standard procedures.

INSTRUCTION FOR USE

- Dissolve 36.23 grams in 1000 ml distilled/ purified water.



- Heat the medium to dissolve completely if necessary.
- Dispense the medium into flasks and tubes as desired.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow, homogenous free flowing powder

Appearance of prepared medium : Light amber colored clear to slightly opalescent solution with slight precipitate.

pH (at 25°C) : 7.0 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period
<i>Salmonella Paratyphi A</i>	9150	50-100	Luxuriant	≥70%	35-37°C	6-8 Hours
<i>Salmonella Paratyphi B</i>	8759	50-100	Luxuriant	≥70%	35-37°C	6-8 Hours
<i>Salmonella Choleraesuis</i>	12011	50-100	Luxuriant	≥70%	35-37°C	6-8 Hours
<i>Salmonella Enteritidis</i>	13076	50-100	Luxuriant	≥70%	35-37°C	6-8 Hours
<i>Salmonella typhi</i>	6539	50-100	Luxuriant	≥70%	35-37°C	6-8 Hours
<i>Salmonella Typhimurium</i>	14028	50-100	Luxuriant	≥70%	35-37°C	6-8 Hours

PACKAGING:

In pack size of 100 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.



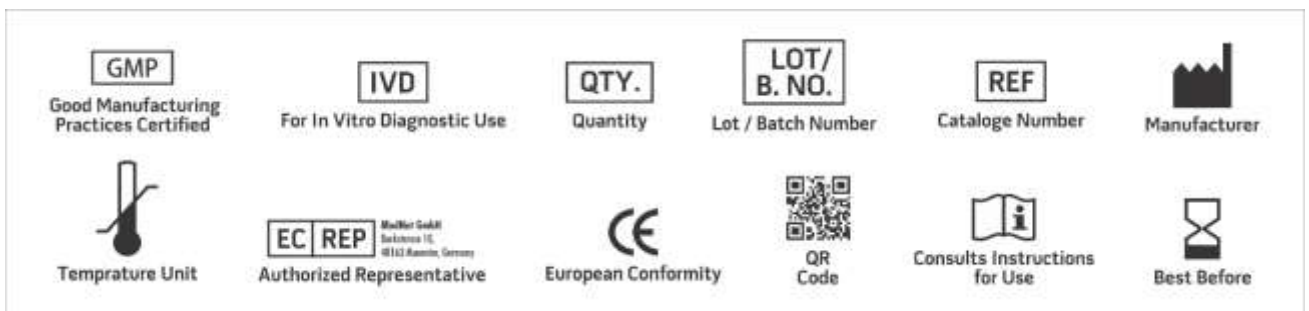
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

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

REFERENCES

1. FDA Bacteriological Analytical Manual, 2005, 18th ed., AOAC, Washington, DC.
2. Sperber W. H. and Deibel R. H., 1969, Appl. Microbiol., 17:533.
3. Fantasia L. D., Sperber W. H. and Deibel R. H., 1969, Appl. Microbiol., 17:540.
4. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.



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

***For Lab Use Only**
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