TM 2180 – M-BRILIANT GREEN BROTH

INTENDED USE
For the detection of Salmonellae by the membrane filter technique.

PRODUCT SUMMARY AND EXPLANATION
Brilliant green broth is differential selective medium, used for the primary screening of *Salmonella* in polluted water through membrane filter technique. *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*. Membrane screening technique developed by Geldreich and Jeter. Application of the M-Brilliant Green Broth for primary screening of *Salmonella* in polluted water was developed by Kabler and Clark. Modification of Brilliant Green Agar without agar in double strength is modified into this selective differential medium. *Salmonella* are unable to ferment either lactose or saccharose in the medium. This allows identification of accompanying weakly lactose-positive or lactose-negative, but saccharose positive microorganisms.

COMPOSITION

Ingredients	Gms / Ltr
Lactose	20.000
Protease peptone	20.000
Saccharose	20.000
Sodium chloride	10.000
Phenol red	0.160
Brilliant green	0.025
Yeast extract	6.000

PRINCIPLE
In the medium, yeast extract and protease peptone are sources of carbon, nitrogen, vitamins and minerals. Carbon and energy sources act by lactose and saccharose. Sodium chloride provides essential ions. Phenol red act as pH indicator. Brilliant green inhibits the growth of gram-positive and most of the gram-negative bacteria excluding *Salmonella*.

In this technique the known quantity of water is passed through membrane filter and this filter is then kept on an absorbent pad saturated with M-Tetrathionate Broth, followed by incubation in humid atmosphere for 3 hours at 35°C. Then the membrane is transferred to another absorbent pad which is saturated with M-Brilliant Green Broth where incubation is continued for 15 hours more at 35°C. After the incubation of total of 18 hours, the membrane is transferred to a fresh pad soaked in urease test reagent (20 grams urea, 0.2 grams phenol red, 0.16 grams bromothymol blue, all components mixed in 1 litre of distilled water). For screening of *Salmonella* urease test reagent is recommended for use in the membrane filter technique. It is recorded after 20 minutes. Purple colonies that are urease positive and lactose, saccharose negative probably depicts Proteus species. Yellow colonies which are urease negative and lactose or saccharose positive are coliforms. Enteric pathogens are pink to red colonies with urease negative and lactose and saccharose negative are. Due to diffusion of urease color reaction over entire membrane surface, it is recommended that selection of red or pink colonies further processed to subculture and serological tests within 15-30 minutes after diffusion of reagent.

INSTRUCTION FOR USE

- Dissolve 76.19 grams in 1000 ml distilled water.
- Heat the medium to dissolve completely if necessary. Do not autoclave.
- Cool the medium to 35°C and saturate sterile absorbent cotton pad with 2 ml of the broth. The medium should be used within 24 hours of rehydration.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to pink homogeneous free flowing powder.
Appearance of prepared medium : Greenish brown colored clear to slightly opalescent solution.
pH (at 25°C) : 6.9 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Colour of the colony	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	None-poor	Yellowish green	35-37°C	18-24 Hours
Salmonella Typhi	6539	50-100	Poor-fair	Reddish pink	35-37°C	18-24 Hours
Salmonella Typhimurium	14028	50-100	Luxuriant	Pinkish white	35-37°C	18-24 Hours
Staphylococcus aureus	25923	>=10^3	Inhibited	-	35-37°C	18-24 Hours
Salmonella Enteritidis	13076	50-100	Good-Luxuriant	Pinkish white	35-37°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.

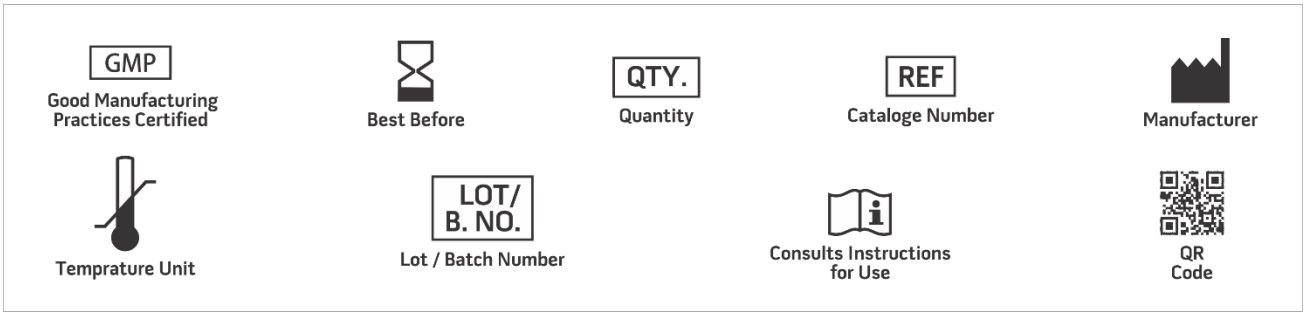
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

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

REFERENCES

1. Geldreich E. E. and Jeter M. L., 1952, Bact. Proc. SAB, Boston, P.33.
2. Kabler P. W. and Clark H. F., 1952, American J. Publ. Hlth., 42:390.
3. Kauffmann F., 1935, Z. Hyg. Infektionskr., 117:26.



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

***For Lab Use Only**

Revision: 08 Nov., 2019