

TM 2009 – BISMUTH SULPHITE AGAR MODIFIED

INTENDED USE

For the selective isolation and preliminary identification of *Salmonella* Typhi and other Salmonellae from pathological materials, sewage, water supplies, food etc.

PRODUCT SUMMARY AND EXPLANATION

The Salmonellae constitute the most taxonomically complex group of bacteria among *Enterobacteriaceae*. Human *Salmonella* infections are most commonly caused by ingestion of food, water or milk contaminated by human or animal excreta. Humans are the only reservoirs of *S. typhi*. Four clinical types of *Salmonella* infections may be distinguished namely gastroenteritis, bacteremia or septicemia, enteric fever and a carrier state. Of the various media employed for the isolation and preliminary identification of *Salmonellae*, particularly *Salmonella typhi*; Bismuth Sulphite Agar is the most productive. Bismuth Sulphite Agar, Modified is a modification of the original formulation of Wilson and Blair Medium. It is also recommended for the isolation of *Salmonella typhi* and other *Salmonella*. *S. typhi*, *S. enteritidis* and *S.typhimurium* typically grow as black colonies with a surrounding metallic sheen resulting from hydrogen sulphide production and reduction of sulphite to black ferric sulphide. *Salmonella Paratyphi A* grows as light green colonies. Bismuth Sulphite Agar may be inhibitory to some strains of *Salmonella* species and therefore should not be used as the sole selective medium for these organisms. *Shigella* species are mostly inhibited on this medium; exceptions being *S. flexneri* and *S.sonnei* and also some Salmonella like *S.Sendai*, *S. Berta*, *S. Gallinarum*, *S.abortus-equi* are inhibited. Also this medium favors use of larger inoculum as compared to other selective media, as it has unique inhibitory action toward gram-positive organisms and coliforms.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	5.000
Beef extract	5.000
Dextrose (Glucose)	5.000
Disodium hydrogen phosphate	4.000
Ferrous sulphate	0.300
Bismuth sulphite indicator	8.000
Brilliant green	0.016
Agar	12.700

PRINCIPLE

The medium contains peptone and Beef extract serve as sources of carbon, nitrogen, vitamins and essential growth factors. Dextrose (Glucose) is the carbon source. Disodium hydrogen phosphate maintains the osmotic equilibrium. Bismuth sulphite indicator along with brilliant green inhibits the intestinal gram-positive and gram-negative bacteria. Ferrous sulphate aids in detection of hydrogen sulphide production. Clinical samples can be directly used to inoculate Bismuth Sulphite Agar. In case of food samples, pre enrichment of the sample is done prior to inoculation.

INSTRUCTION FOR USE

- Dissolve 40 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely, do not sterilize in autoclave or by fractional sterilization since overheating may destroy the selectivity of the medium.
- Cool to 45-50°C. Mix well and pour into sterile Petri plates.



- The sensitivity of the medium depends largely upon uniform dispersion of precipitated bismuth sulphite in the final gel, which should be dispersed before pouring into the sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Light yellow to greenish yellow homogeneous free flowing powder
Appearance of prepared medium	: Greenish yellow coloured opalescent with flocculent precipitate forms in Petri plates.
pH (at 25°C)	: 7.6±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
<i>Klesiella aerogenes</i>	13048	None-poor	0-10%	Brown green(depends on inoculum density)	35-37°C	40-48 Hours
<i>Enterococcus faecalis</i>	29212	Inhibited	0%	-	35-37°C	40-48 Hours
<i>Escherichia coli</i>	25922	None-poor	0-10%	Brown green(depends on inoculum density)	35-37°C	40-48 Hours
<i>Salmonella Typhi</i>	19430	Good-luxuriant	>=50%	Black with metallic sheen	35-37°C	40-48 Hours

PACKAGING:

In pack size of 100 and 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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 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative <small>MedNet GmbH Borkstrasse 10, 48163 Muenster, Germany</small>	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

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