

TECHNICAL DATA SHEET

Bismuth Sulphite Agar

Principle

Bismuth Sulphite agar is composed of meat extract (equivalent to beef extract), peptone, dextrose, ferrous sulfate, bismuth Sulphate indicator, brilliant green and agar. Meat extract and peptone provide nitrogen and minerals. Dextrose is an energy source. Disodium phosphate is a buffering agent. Bismuth sulfite indicator and brilliant green inhibits gram-positive bacteria and some coliforms and *Salmonella* to grow luxuriantly. Ferrous sulfate is used for detection of production. The hydrogen sulfide producer's forms precipitate with ferrous sulfate gives brown to black color with metallic sheen to the positive cultures. Agar is a solidifying agent.

Use: For selective isolation of Salmonellae from faeces, urine, sewage and other materials.

Contents*

Ingredients	Gram/Litre
Meat Extract#	5.00
Peptone	10.00
Dextrose	5.00
Ferrous Sulphate	4.00
Bismuth Sulphate Indicator	8.00
Brilliant Green	0.30
Agar	20.00
pH at 25°C	7.7 ±0.2

* Formula adjusted for optimum performance and parameters

Equivalent to beef extract

Directions: Dissolve 52.30 grams in 1000 ml distilled water. Boil for 1 to minutes to dissolve the medium completely. **AVOID OVERHEATING** and **DO NOT AUTOCLAVE**, cool it to 42-45 °C and distribute aseptically in petri plates with gentle shaking for equal distribution of flocculent. Ensure complete solidification and inoculate test sample aseptically.

Specimens types analyzed

Pharmaceutical samples, clinical and non-clinical samples etc.

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Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Light beige colored free flowing, homogeneous powder
Reaction of 5.2% solution	7.7 ±0.2 at 25 °C
pH	7.50- 7.90
Gelling	Firm comparable with 2% agar gel
Color and clarity of ready medium	Light greenish yellow colored, opalescent with flocculent precipitate form in gel media
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 °C for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

Different Microbial Response: Cultural characteristics observed after incubation at 33-37°C for 18-48 hours. Inoculum (CFU 50-100)

Organism	ATCC	Growth	Recovery %	Colony color
<i>Salmonella typhimurium</i>	14028	Luxuriant	≥ 60%	Grey to black with greenish metallic sheen
<i>Salmonella abony</i>	NCTC-6017	Luxuriant	≥ 60%	Grey to black with greenish metallic sheen
<i>Salmonella enteritidis</i>	13076	Luxuriant	≥ 60%	Grey to black with greenish metallic sheen
<i>Escherichia coli</i>	8739	Poor	<20%	brown to green
<i>Klebsiella aerogenes</i>	13048	None to Poor	<10%	Brownish green
<i>Enterococcus faecalis</i>	14506	Inhibited	0%	--

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Storage and Shelf Life

The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Atlas, R. M. (2005). Handbook of media for environmental microbiology. CRC press.
2. Difco Manual (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.

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