

Bismuth Sulfite Agar

Catalog : HB4090-3-500

Bismuth Sulfite Agar is a highly selective medium used for isolating Salmonella spp., particularly Salmonella Typhi, from food and clinical specimens.

Approximate Formula:

Ingredients	gm/liter
Peptone	10.0
Beef extract	5.0
Ferrous sulfate	0.3
Bismuth ammonium citrate	2.0
Sodium sulfite	6.0
Disodium Hydrogen Phosphate	4.0
Dextrose	5.0
Brilliant Green	0.025
Agar	20.0
Final pH7.5±0.2 at 25℃	

*Adjusted and/or supplemented as required to meet performance criteria.

Directions:

Suspend 50.3g of the powder in 1 L of purified water. Mix thoroughly. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder. DO NOT AUTOCLAVE. Cool to 45-50℃, evenly disperse the precipitate before dispensing into petri dishes. Keep in dark place and use the medium within 48 hours after it is prepared.

Principle and Interpretation:

Beef extract and peptone provide nitrogen, vitamins and minerals. Dextrose is an energy source. Disodium phosphate is a buffering agent. Sodium sulfite and brilliant green are complementary in inhibiting gram-positive bacteria and members of the coliform group, while allowing Salmonella to grow luxuriantly. Ferrous sulfate is included for detection of H₂S production. When H₂S is present, the iron in the formula is precipitated, giving positive cultures the characteristic brown to black color with metallic sheen. Agar is the solidifying agent.

Appearance:

Dehydrated medium is a free-flowing grey-white powder. The prepared medium is a kind of light grey-green gel.

Precautions:

This medium is for laboratory use only. Dried medium which is caking or color variation cannot be used.

Storage conditions and Shelf life:

Bismuth Sulfite Agar must be stored tightly capped in the original container at 5-30℃. The dehydrated medium has a shelf life of 5 years from date of manufacturing. Prepared medium may be stored, out of direct light at 2-8℃.

Quality control:

Prepare the culture medium as per label directions. Inoculate and incubate at 36±1℃ for 40-48 hours.

Microorganism	Strains Number	Inoculum (CFU)	Growth	Recovery	Remarks
<i>Salmonella typhi</i>	CMCC 50071	20-200	Luxuriant	≥50%	Black colonies with metallic luster
<i>Enterococcus faecalis</i>	ATCC 29212	> 10 ³	Inhibited	/	/
<i>Salmonella typhimurium</i>	ATCC 14028	20-200	Luxuriant	≥50%	Black or gray-green colonies with metallic luster
<i>Escherichia coli</i>	ATCC 25922	> 10 ³	Inhibited	/	/
<i>Staphylococcus Aureus</i>	ATCC 6538	> 10 ³	Inhibited	/	/

References:

1. Flowers, Andrews, Donnelly and Koenig. 1993. In Marshall (ed.), Standard methods for the examination of dairy products, 16th ed. American Public Health Association, Washington, D.C.
2. Wilson and Blair. 1926. J. Pathol. Bacteriol. 29:310.