BISMUTH SULFITE AGAR BASE

INTENDED USE
Remel Bismuth Sulfite Agar Base is a medium recommended for use in qualitative procedures for the isolation and differentiation of Salmonella species from clinical specimens and other materials.

SUMMARY AND EXPLANATION
Bismuth Sulfite Agar was introduced by Wilson and Blair in 1927 for selective isolation of typhoid and paratyphoid groups of bacteria from stool specimens.[1] The formulation was modified by Hajna in 1951, and by Hajna and Damon in 1956, by substituting bismuth ammonium citrate and ferric ammonium citrate for bismuth citrate and ferrous sulfate, respectively.[2,3] Bismuth Sulfite Agar has been recommended by the *United States Pharmacopeia* (USP) for use in microbial limit testing.[4] It is recommended by the Food and Drug Administration (FDA) and the American Public Health Association (APHA) for isolation of *Salmonella* and other pathogens from foods and dairy products.[5-8]

PRINCIPLE
Beef extract and meat peptone supply amino acids, peptides, carbohydrates, vitamins, and nitrogenous compounds required for the growth of microorganisms. Dextrose provides a ready source of energy. Ferrous sulfate is an indicator of hydrogen sulfide production. Bismuth is a heavy metal having inhibitory properties for certain microorganisms. Brilliant green dye is a selective agent. The characteristic black or green coloration of *Salmonella* species is a metallic precipitate that forms when hydrogen sulfide, produced by *Salmonella* species from sulfur compounds in the medium, reacts with ferrous sulfate.

REAGENTS (CLASSICAL FORMULA)*

Meat Peptone	10.0	g	Disodium Phosphate	4.0	g
Sodium Sulfite	6.0	g	Bismuth Ammonium Citrate	2.0	g
Beef Extract	5.0	g	Ferrous Sulfate	0.3	g
Dextrose	5.0	g	Brilliant Green	25.0	mg
			Agar	20.0	g

pH 7.6 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PRECAUTIONS
This product is For Laboratory Use only. It is not intended for use in the diagnosis of disease or other conditions.

PREPARATION OF DEHYDRATED CULTURE MEDIUM
1. Suspend 52 g of medium in 1000 ml of demineralized water.
2. Heat to boiling with agitation to completely dissolve. **Do not autoclave.**
3. Cool medium to 50-55°C and mix to evenly disperse the precipitate.
4. Dispense into plates. (**Note:** Medium should be used the day it is prepared or within user's validated parameters for use.)

PROCEDURE
1. Consult current editions of appropriate references for the recommended procedure for sample preparation, inoculation, testing, and interpretation.

QUALITY CONTROL
Each lot number of Bismuth Sulfite Agar Base has been manufactured, packaged, and processed in accordance with current Good Manufacturing Practice regulations. All lot numbers have been tested using the following quality control organisms and have been found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

CONTROL	INCUBATION	RESULTS
Salmonella enterica serovar Arizonae ATCC® 13314	Ambient, 18-24 h @ 33-37°C	Growth, black colonies w/ metallic sheen
Salmonella enterica serovar Choleraesuis ATCC® 13312	Ambient, 18-24 h @ 33-37°C	Growth, black colonies w/ metallic sheen
Salmonella enterica serovar Typhimurium ATCC® 14028	Ambient, 18-24 h @ 33-37°C	Growth, black colonies w/ metallic sheen
Salmonella enterica serovar Typhimurium ATCC® 19430	Ambient, 18-24 h @ 33-37°C	Growth, black colonies w/ metallic sheen
Escherichia coli ATCC® 25922	Ambient, 18-24 h @ 33-37°C	Marked inhibition
Pseudomonas aeruginosa ATCC® 27853	Ambient, 18-24 h @ 33-37°C	Marked inhibition
Enterococcus faecalis ATCC® 29212	Ambient, 18-24 h @ 33-37°C	No growth
Shigella flexneri ATCC® 12022	Ambient, 18-24 h @ 33-37°C	No growth

BIBLIOGRAPHY

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Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, sample collection, storage and transportation, materials required, quality control, and limitations.

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