95388 Bismuth sulfite Agar

Selective medium for the isolation and differentiation of *Salmonella typhi* and other salmonellae from clinical material, sewage, water supplies, food and other products suspected of containing these pathogens.

Composition:

Ingredients	Grams/Litre
Mixed peptone	10.0
Meat extract	5.0
D(+)-Glucose	5.0
Disodium hydrogen phosphate	4.0
Bismuth ammonium citrate	1.85
Iron(ll) sulfate 7 x H_2O*	0.55
Sodium sulfite	6.15
Brilliant green	0.025
Agar	15.0
Final pH 7.6 +/- 0.2 at 25°C	

*equivalent to 0.3g/L iron(ll) sulfate water free

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance: slightly beige coloured with some nearly white and darker particles, homogeneous, free flowing powder.
Gelling: firm
Colour and Clarity: deep greenish-yellow turbid gel forms in Petri plates.

Directions:
Dissolve 47.55 g in litre distilled water and heat to boiling to dissolve the medium completely. DO NOT STERILIZE. Before pouring mix well to evenly distribute precipitate formed. This medium should be prepared, and the plates poured, 24h in advance of their intended use, since the freshly prepared medium is excessively toxic to Salmonellae. It must also be remembered the medium loses selectivity after 3-4 days, even when refrigerated.

Principle and Interpretation:
In this medium freshly precipitated bismuth sulphite acts together with brilliant green as a selective agent by suppressing the growth of coliforms, while permitting the growth of salmonellae. Sulphur compounds provide a substrate for hydrogen sulphide production, whilst the metallic salts in the medium stain the colony and surrounding medium black or brown in the presence of hydrogen sulphide. Atypical colonies may appear if the medium is heavily inoculated with organic matter. Such a situation may be prevented by suspending the sample in sterile saline and using the supernatant for inoculation. However, for *Salmonella typhi* recovery the latter technique is not recommended. Where the number of salmonellae is expected to be small, enrichment methods may be employed.

Cultural characteristics after 40-48 hours at 35°C.

Organisms (ATCC)	Growth	Appearance of Colony
Sallmonella enteritidis (13076)	++	black with metallic sheen
Salmonella typhi (19430)	++	black with metallic sheen
Enterobacter aerogenes (13048)	none to poor	brown to green
Escherichia coli (25922)	none to poor	brown to green
Shigella flexneri (12022)	none to poor	brown
Enterococcus faecalis (29212)	-	-

References:

1. Isolation of salmonellae: J.H. MacCoy, J. Appl. Bact. 25, 213 (1962)
2. W.J. Wilson, E.M.McV. Blair, J. Hyg. 26, 374 (1927)
3. ibid. 31, 138 (1931)
4. Cook, G.T. (1952) J.Path. Bact. 64, 559
5. McCoy, J.M. and Spain, G.E. (1969) in Isolation Methods for Microbiologists, p.20. Ed by Shapton, D.A. and Gould G.W. Academic Press London
6. Hobbs, B.C., King, G.C.G. and Allison V.D. (1945) Monthly Bulletin of the Ministry of Health and Emergency Public Health Lab Service 4, 40

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.