PRODUCT DATA SHEET

SELENITE CYSTINE BROTH BASE (W/O BISELENITE) TM 854

For selective enrichment of *Salmonella* & possibly *Shigella sonnei* from faeces, urine, water & food stuff.

Composition

Ingredients	Gms/Ltr.
Sodium phosphate	10.00
Casein enzymatic hydrolysate	5.00
Lactose	4.00
L-Cystine	0.01

*Dehydrated powder, hygroscopic in nature, store, in a dry place in tightly- sealed containers below 25°C and protect from direct Sunlight.

Instructions for use

Dissolve 19gms in 1000ml distilled water. Add 4gms of Sodium Biselenite (428). Mix well and heat gently to dissolve the medium completely. Dispense into sterile test tubes up to minimum 5 cm depth. Sterilize in a boiling water bath (at 100° C) for 10 minutes. **DO NOT AUTOCLAVE**.

Appearance: Light yellow colour, clear solution without any precipitate.
pH (at 25°C): 7.0 ± 0.2

Principle

SELENITE CYSTINE BROTH BASE (W/O BISELENITE) is used for enrichment and detection of *Salmonella* sp. from faeces, urine and food products by using selective supplement; Sodium biselenite. Selective inhibitory effect of selenite was first described by Klett (1) and Guth (2) applied it to isolate *Salmonella typhi*. This medium is a modification of Leifson's (3) recipe with added cystine (4). The formulation complies with the recommendations and standard methods of AOAC (5), American Public Health Association (6) and the United States Pharmacopoeia (7) for detection of *Salmonella* sp. Medium contains casein enzymatic hydrolysate as a sole source of nitrogen, carbon and amino acids. Selenite inhibits growth of gram positive bacteria and other gram negative bacteria. Lactose helps in maintaining the pH. As Selenite is reduced by S*almonella* species the pH shifts towards alkali. It reduces the toxicity of selenite, resulting in overgrowth of accompanying bacteria. The acid produced by these bacteria through lactose fermentation helps in lower down the pH near neutral. Sodium phosphate works as a buffering salt and also reduces the toxicity of selenite. L-Cystine helps in improved recovery of *Salmonella* sp.

Interpretation

Cultural characteristics observed after inoculating 10^3 CFU/ml, for 18 - 24 hours at 35 ± 2°C and sub-culturing on MacConkey Agar (TM 379).

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Appearance of colony on MacConkey Agar
Salmonella typhimurium	14028	10^3	Good	Colourless
Salmonella typhi	19430	10^3	Good	Colourless
Shigella sonnei	25931	10^3	Good	-
Escherichia coli	25922	10^3	None to poor	Pink with bile precipitation

References

1. Klett, A. 1900. Zeitsch fÏr Hyg. und Infekt. **33:** 137-160.
2. Guth, F. 1926. Zbl. Bakt. I. Orig. **77:** 487-496.
3. Leifson, E. 1939. Am. J. Hyg. **24:** 423-432.
4. North, W.R. and Bartran M.T. 1953 Appl. Microbiol. **1:** 130-134.
5. Association of Official Analytical Chemists. 1998. Bacteriological Analytic Manual. 5th Edn. AOAC, Washington DC.
6. American Public Health Association. 2001. Compendium of Methods for the Microbiological Examination of Foods. APHA Inc. Washington DC.
7. United States Pharmacopoeia USP 28. 2005. Microbial Test Limits.