Technical Information

Mannitol Selenite Broth w/ Brilliant green (Twin Pack)

Product Code: DM 2537

Application: - Mannitol Selenite Broth w/ Brilliant green is recommended for enrichment of Salmonellae from faeces, food - stuffs and other materials.

Composition**

Ingredients	Gms / Litre
Part A	-
Meat peptone	5.000
Yeast extract	5.000
Sodium taurocholate	1.000
Brilliant green	0.005
Potassium dihydrogen phosphate	3.400
Dipotassium hydrogen phosphate	4.350
Mannitol	5.000
Part B	-
Sodium selenite	4.000
Final pH (25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Guth was first to describe importance of selenite-containing media for the enrichment of Salmonella [(1)]. This medium was further modified by Leifson [(2)] for the enrichment and isolation of Salmonella from clinical specimens. Mannitol Selenite Broth w/ Malachite Green is prepared as per the formulation of Stocks and Osborne [(3)]. This medium is recommended for isolation or enrichment of Salmonella from small inocula. Also the strong buffering capacity of the medium prevents damage to cultures due to over-acidification when mannitol is fermented.

Meat peptone and yeast extract provides amino acids and other nitrogenous substances to Salmonella. Mannitol serves as fermentable carbohydrate, a sugar alcohol which also helps in maintaining a uniform pH along with the phosphates. Phosphates also lessen the toxicity of selenite.

Do not incubate longer than 24hours as the inhibitory effect of selenite is reduced after 6-12 hours incubation [(4)]. Subculture broth from the upper third of the broth column to greater or lesser inhibitory selective agars.

Methodology

Suspend 4.0 grams of Part B in 1000 ml. distilled water. Add 24.0 grams of Part A. Mix well. If desired add 0.5g/l sodium sulpha pyridine, warm to dissolve the medium completely. Dispense as desired and sterilize in a boiling water bath or free flowing steam for 10 minutes. DO NOT AUTOCLAVE. Excessive heating is detrimental. Discard the prepared medium if large amount of selenite is reduced (indicated by red precipitate at the bottom of tube/bottle).

Caution: Sodium hydrogen selenite (Sodium biselenite) is very toxic and corrosive agent and causes teratogenicity. Handle with great care. If there is contact with skin, wash immediately with lot of water.

Quality Control

Physical Appearance
Part A : Cream to pale green homogeneous free flowing powder Part B : White to cream homogeneous free flowing powder

Colour and Clarity of prepared medium
Green coloured Opalescent to slightly hazy solution of complete medium

Reaction
Reaction of 1.9% w/v of Part A + 0.4% w/v of Part B at 25°C. pH : 7.0±0.2

pH range 6.80-7.20

Cultural Response/ characteristices
DM 2537: Cultural characteristics observed when subcultured on MacConkey Agar (DM081), after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Recovery(increase in numbers)	Colour of colony
Escherichia coli ATCC 25922	50-100	little-none	pink with bile precipitate
Salmonella Enteritidis ATCC 13076	50-100	luxuriant	colourless
Salmonella Paratyphi B ATCC 8759	50-100	luxuriant	colourless
Salmonella Typhi ATCC 6539	50-100	luxuriant	colourless

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^{o} in sealable plastic bags for 2-5 days.

Further Reading

1. Guth F., 1916, Zentralbl. Bakteriol. Parasitenk. Indektionskr. Hyg. Abt. 77:487
2. Leifson E., 1936, Am. J. Hyg., 24(2):423.
3. Stockes J. L. and Osborne W. W., 1955, Appl. Microbiol., 3-4,217
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore

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