Technical Data

Salmonella Shigella Selective Agar, Improved (Twin Pack) M1959

[SS Selective Agar, Improved (Twin Pack)]

Recommended for the selective detection and isolation of *Salmonella* & *Shigella* species.

Composition**

Ingredients	Gms / Litre
Part A	-
Proprietary	81.93
Part B	-
Proprietary	4.600
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 81.93 grams in 1000 ml distilled water. Add 4.6 ml of Part B. Boil with frequent agitation to dissolve the medium completely. DO NOT AUTOCLAVE OR OVERHEAT. Overheating may destroy selectivity of the medium. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

SS Selective Agar, Improved is recommended as selective medium for the isolation of *Salmonella* as well a *Shigella* species from clinical specimens (1,2,3). It provides significantly greater sensitivity and specificity in the detection of both the organisms. The other selective medias like HE, SS and XLD largely fail to suppress the growth of *Salmonella* interfering organism like *Citrobacter* and *Proteus* which resemble the presence of *Salmonella* . (4).

The medium is supplemented with essential growth nutrients like nitrogen, amino acids and vitamins. The presence of four sugars serve as sources of fermentable carbohydrates. The presence of three different sugars helps in the differentiation of *Shigella* species. The differentiation of carbohydrate utilization is indicated by the presence of indicator dye wherein the colour of colony changes from red to yellow. The presence of unique cabohydrate in the medium controls the growth of false positive *Salmonella* suspect (5). The amino acid present in the medium is utilized by bacteria resulting in pH rise.

Presence of H2S detection systems helps to differentiate between the H2S producers from H2S non producers. *Proteus* species which may resemble *Salmonella* are partially to completely inhibited on this medium due to presence of inhibitory substance. The selective substance present in Part B heselectively inhibits the growth of gram positive organisms.

Quality Control

Appearance

Part A: Light yellow to pink homogeneous free flowing powder. Part B: Colourless to pale yellow liquid

Gelling

Firm, comparable with 1.35% Agar gel

Colour and Clarity of prepared medium

Red coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 8.65% w/v aqueous solution of Part A and 0.46 ml of Part B at 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

M1959: Cultural characteristics observed after incubation at 35-37°C for 18-48 hours. Recovery rate is considered as 100% for bacteria growth on Soyabean Casein Digest Agar.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
Cultural Response				
Salmonella Typhimurium ATCC 14028	50 -100	luxuriant	>=50%	red with black centres
Escherichia coli ATCC 25922	50 -100	fair-good	30-40%	yellow
Salmonella Enteritidis ATCC 13076	50 -100	good-luxuriant	>=50 %	red with black centres
Salmonella Typhi ATCC 6539	50 -100	good-luxuriant	>=50 %	red with black centres
Shigella dysenteriae ATCC 13313	50 -100	good-luxuriant	>=50 %	red
Shigella flexneri ATCC 12002	50 -100	fair-good	30 -40 %	red
Shigella sonnei ATCC 25931	50 -100	fair-good	30 -40 %	red
Enterobacter aerogenes ATCC 13048	50 -100	fair	20 -30 %	yellow
Staphylococcus aureus ATCC 25923	>=10^3	inhibited	0%	
Enterococcus faecalis ATCC 29212	>=10^3	inhibited	0%	
Proteus mirabilis ATCC 25933	50-100	none-poor	<=10%	red

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1.Miller,R.G.et al.1991.Xylose-Lysine-tergitol 4:an improved selective agar medium for the isolation of Salmonella Poult.Sci.70:2429-2432.Erratum,Poult.Sci.71:398,1992.
2.Mallinson,E.T.et al.2000.Improved plating media for the detection of Salmonella species with typical and atypical hydrogen sulfide production.J.Vet.Diagn.Invest.12:83-87.
3.Mallinson,E.T.1991.Novelsalmonelladetectionsystemdeveloped;combines increased reliability,practicality.Feedstuffs 63:40-44.
4.Pollock,H.M. and B.J.Dahlgren.1974,Clinical evaluation of enteric media in the primary isolation of Salmonella and Shigella.Appl.Microbiol.27:197-201.
5.Miki,K.et al.1996.Re-speciation of the original strains of serovars in the Citrobacter freundii (Bethesda-Ballerup group) antigenic scheme of West and Edwards.Microbiol.Immunol.40:915-921.

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