SS Agar w/ Sucrose

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SS Agar w/ Sucrose is used for the selective isolation and differentiation of *Salmonella* and *Shigella* species.

Composition**

Ingredients	Gms / Litre
Meat extract	3.000
Pancreatic digest of casein	4.000
Peptic digest of animal tissue	4.000
Sodium citrate	5.000
Sodium thiosulphate	2.000
Ferric ammonium citrate	1.000
Lactose	10.000
Saccharose(Sucrose)	10.000
Bile salt	5.000
Neutral red	0.020
Agar	15.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 59.03 grams in 1000 ml distilled water. Heat to boiling with frequent agitation to dissolve the medium completely. Cool to 45-50°C. Mix and pour into sterile Petri plates. DO NOT AUTOCLAVE OR OVERHEAT. Overheating may destroy the selectivity of the medium.

Principle And Interpretation

Salmonella and *Shigella* are gram-negative, facultatively anaerobic, non-sporulating rods in the family *Enterobacteriaceae* . The media is recommended as differential and selective medium for the isolation of *Salmonella* and *Shigella* species from pathological specimens (1),suspected foodstuffs (2, 3, 4, 5) and for microbial limit test (6). SS Agar is a moderately selective medium in which gram-positive bacteria are inhibited by bile salts.

Peptic digest of animal tissue, pancreatic digest of casein and meat extract provides nitrogen,vitamins,minerals and amino acids essential for growth. Lactose and sucrose are the fermentable carbohydrates providing carbon and energy. Bile salts selectively inhibit gram-positive and coliform organisms. Sodium thiosulphate is reduced by certain species of enteric organisms to sulphite and H_2S gas. This reductive enzymatic process is attributed to thiosulphate reductase. Production of H_2S gas is detected as an insoluble black precipitate of ferrous sulphide, formed upon reaction of H_2S with ferric ions or ferric citrate, indicated by black centered colonies. On fermentation of lactose by few lactose-fermenting normal intestinal flora, acid is produced which is indicated by change of colour from yellow to red by the pH indicator neutral red. Thus these organisms grow as red-pigmented colonies. Lactose non-fermenting organisms grow as translucent colourless colonies with or without black centers. *Salmonella* species exhibit colourless colonies with black centers resulting from H_2S production. *Shigella* species form colourless colonies, which do not produce H_2S.Agar acts as a solidifying agent.

Quality Control

Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of Prepared Medium

Reddish orange coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 5.93% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH
7.20-7.60

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Cultural Response				
Escherichia coli ATCC 25922	50-100	luxuriant	>=70%	pink with bile precipitate
Salmonella Typhimurium *ATCC 14028*	50-100	good-luxuriant	>=50%	colourless with black centre
Shigella sonnei ATCC 25931	50-100	luxuriant	50-70%	colourless

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.Lennette and others (Eds.), 1985, Manual of Clinical Microbiology, 4th ed., ASM, Washington, D.C.
2.Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
3.Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
4.Eaton A. D., Clesceri L. S., Rice E. W., and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
5.Williams S., (Ed.), 2005, Official Methods of Analysis of the Association of Official Analytical Chemists, 19th Ed., AOAC, Washington, D.C.
6.The United States Pharmacopoeia, 2006, USP29/NF24, The United States Pharmacopoeial Convention. Rockville, MD.
7.MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.

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