SALMONELLA SHIGELLA AGAR

INTENDED USE

SS Agar and Salmonella Shigella Agar are moderately selective and differential media for the isolation of pathogenic enteric bacilli, especially those belonging to the genus *Salmonella*. This formulation is not recommended for the primary isolation of *Shigella*.

SUMMARY AND EXPLANATION

The culture media that have been developed for the selection and differentiation of enteric microorganisms from clinical and nonclinical materials inhibit the growth of gram-positive species to a varying degree due to the presence of either pure bile salts, mixtures of bile salts or dyes. SS Agar and Salmonella Shigella Agar are examples of media used in the plating of samples for the detection of enteric pathogens that contain bile salt mixtures. This formulation is essentially a modification of the Desoxycholate-Citrate Agar described by Leifson.[1]

PRINCIPLE

SS Agar and Salmonella Shigella Agar are designated as moderately selective media based upon the degree of inhibition of gram-positive microorganisms that they inhibit due to their content of bile salts, brilliant green and citrates. Differentiation of enteric organisms is achieved by the incorporation of lactose in the medium. Organisms that ferment lactose produce acid which, in the presence of the neutral red indicator, results in the formation of red colonies. Lactose nonfermenters form colorless colonies. The latter group contains the majority of the intestinal pathogens, including *Salmonella* and *Shigella*. The sodium thiosulfate and ferric citrate enable the detection of hydrogen sulfide production as evidenced by colonies with black centers.

REAGENTS (FORMULA)

Beef Extract	5.0	g
Proteose Peptone	5.0	g
Lactose	10.0	g
Bile Salts No. 3	8.5	g
Sodium Citrate	8.5	g
Sodium Thiosulfate	8.5	g
Ferric Citrate	1.0	g
Brilliant Green	0.33	mg

Neutral Red	25.0	mg
Agar	13.5	g
Deionized Water	1000.0	ml

PROCEDURE

Use standard procedures to obtain isolated colonies from specimens. A nonselective medium should also be streaked to increase the chance of recovery when the population of gram-negative organisms is low and to provide an indication of other organisms present in the specimen. Incubate plates, protected from light, at 35 ± 2°C for 18-24 hours. If negative after 24 hours, reincubate an additional 24 hours.

EXPECTED RESULTS

Typical colonial morphology on Salmonella Shigella Agar is as follows:

Escherichia coli: Slight growth, pink or red
Enterobacter/*Klebsiella*: Slight growth, pink
Proteus: Colorless, usually with black center
Salmonella: Colorless, usually with black center
Shigella: Colorless
Pseudomonas: Irregular, slight growth
Gram-positive bacteria: No growth

QUALITY CONTROL

All lot numbers have been tested and have been found to be acceptable. Customers can test products using the following quality control organisms. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

Organisms	Incubation	Results
Escherichia coli ATCC 25922	35 ± 2°C for 24 hours	Growth, Pink to red
Shigella flexneri ATCC 12022	35 ± 2°C for 24 hours	Growth, Colorless

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BIBLIOGRAPHY

1. Leifson. 1935. J. Pathol. Bacteriol. 40:581.

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