# Salmonella Shigella Agar (SS Agar)

Cat. 1064

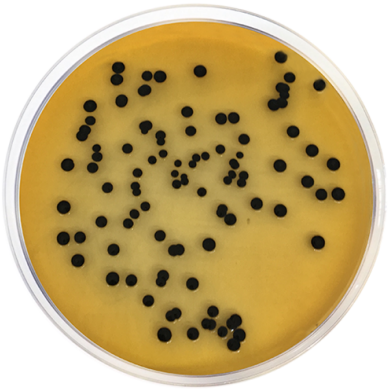
Selective medium for the isolation of Salmonella and Shigella

## Practical information

| Aplications | Categories |
|---|---|
| Selective isolation | Salmonella |
| Selective isolation | Shigella |

Industry: Clinical

CE
IVD



## Principles and uses

Salmonella Shigella Agar (SS Agar) is a selective and differential medium widely used in sanitary bacteriology to isolate Salmonella and Shigella from feces, urine, and fresh and canned foods.

Due to its strong inhibitory power, a heavy inoculum can be used in the SS agar. It must also be streaked in parallel, in less selective media such as Deoxycholate Agar (Cat. 1020), MacConkey Agar (Cat. 1052), Methylene Blue Eosin Agar (EMB) (Cat. 1039), XLD Agar (Cat. 1080) and Enteric Hektoen Agar (Cat. 1030), to increase the probability of detection when the population of microorganisms is scarce.

Beef extract and peptone mixture provide nitrogen, vitamins, minerals and amino acids essential for growth. Lactose is the fermentable carbohydrate providing carbon and energy. Bile salts mixture, sodium citrate and brilliant green inhibit Gram-positive bacteria, most coliform bacteria and swarming Proteus spp., while allowing Salmonella spp to grow. Neutral red is the pH indicator. Sodium thiosulfate and ferric citrate allow the detection of the H2S producing bacteria.

Non-lactose fermenting bacteria (supposed pathogens, such as Shigella and the majority of salmonellae) produce clear colonies, transparent or colorless, while coliforms like E. coli are sufficiently inhibited, and form small colonies that vary from pink to red in color. Enterobacter and Klebsiella bacteria will produce larger colonies than E.coli, mucoid, pale and opaque cream to pink in colour. Colonies from Proteus and some strains of Salmonella will present black centers and a clear halo.

This formulation, highly selective, is not recommended for the primary isolation of Shigella. Some Shigella spp. may be inhibited.

## Formula in g/L

| | | | |
|---|---|---|---|
| Bacteriological agar | 13,5 | Bile salts | 8,5 |
| Brilliant green | 0,0003 | Lactose | 10 |
| Beef extract | 5 | Neutral red | 0,025 |
| Peptone mixture | 5 | Sodium citrate | 8,5 |
| Sodium thiosulfate | 8,5 | Ferric citrate | 1 |

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

## Preparation

Suspend 60 grams of the medium in one liter of distilled water. Mix well until a homogeneous suspension is obtained. Heat with frequent agitation and boil for one minute until complete disolution. DO NOT AUTOCLAVE. Cool to 45-50 °C and distribute in Petri dishes.

## Instructions for use

For clinical diagnosis, the type of sample is feces:

- Inoculate sample and incubate at 35 ºC for 18 to 24 hours.
- Streak in parallel, in less selective media such as Deoxycholate Agar (Cat. 1020), MacConkey Agar (Cat. 1052), Methylene Blue Eosin Agar (EMB) (Cat. 1039), XLD Agar (Cat. 1080) and Enteric Hektoen Agar (Cat. 1030).

## Quality control

| Solubility | Appareance | Color of the dehydrated medium | Color of the prepared medium | Final pH (25ºC) |
|---|---|---|---|---|
| w/o rests | Fine powder | Beige-pink | Red-orange | 7,0±0,2 |

## Microbiological test

Incubation conditions: (35±2 ºC / 18-24 h).

| Microorganisms | Specification | Characteristic reaction |
|---|---|---|
| Shigella flexneri ATCC 12022 | Good growth | Colorless colony |
| Klebsiella aerogenes ATCC 13048 | Partially inhibited growth | Cream-pink colony |
| Salmonella enteritidis ATCC 13076 | Good growth | Colorless with black center colony |
| Salmonella typhimurium ATCC 14028 | Good growth | Colorless with black center colony |
| Enterococcus faecalis ATCC 19433 | Inhibited growth | |
| Escherichia coli ATCC 25922 | Inhibited growth | |
| Salmonella typhi ATCC 6539 | Good growth | Colorless with black center colony |

## Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

## Bibliography

Pub. Health Reports. 65:1075. 1950. Paper Read at Microbiological Congress, 1950. Proc. 22nd Ann. Meet. Northeastern Conf. Lab. Workers in Pullorum Disease Control Burlington, Vermont, June 20-21. 1950.