

Salmonella Shigella Agar (i23174)

SS Agar is used for isolating *Salmonella* and some *Shigella*.

Industry: Clinical / Food

Principles & Uses

Salmonella Shigella Agar (SS Agar) serves as a selective and differential medium extensively employed in the field of sanitary bacteriology for the isolation of *Salmonella* and *Shigella* from various sources including feces, urine, and both fresh and canned foods. This medium exhibits strong inhibitory properties, allowing for the use of substantial sample inocula on SS Agar plates. Simultaneously, it is advisable to streak samples on less selective media, such as Deoxycholate Agar, MacConkey Agar, Methylene Blue Eosin Agar (EMB), XLD Agar, and Enteric Hektoen Agar, particularly when dealing with low microbial populations to enhance detection probability.

The constituents of SS Agar play distinct roles in achieving selectivity. Peptones deliver essential growth nutrients, while lactose serves as the fermentable carbohydrate for carbon and energy supply. Brilliant green, bile salts, and sodium citrate act as selective inhibitors, restraining gram-positive bacteria, most *coliforms*, and swarming *Proteus* spp., yet promoting the growth of *Salmonella* spp. Moreover, neutral red serves as the pH indicator. The presence of H₂S-producing bacteria is detected through the reaction of H₂S with ferric ions or ferric citrate, resulting in insoluble black precipitates at the center of colonies. Pathogens like *Shigella* are identified based on colony characteristics, colors, and the absence of H₂S production.

Composition (gr/L)

Lactose 10, Bile salts 8.5, Sodium Thiosulfate 8.5, Sodium Citrate 8.5, Beef Extract 5, Pancreatic digest of Casein 2.5, Peptic digest of animal tissue 2.5, Ferric citrate 1, Neutral Red 0.025, Brilliant Green 0.33mg, Agar 13.5.

Final pH at 25°C 7.0 ± 0.2

Preparation from dehydrated Powder

Suspend 60 grams in 1 Liter distilled or deionized water. Heat to boiling for no more than 2-3 minutes to dissolve completely. Avoid overheating. **DO NOT AUTOCLAVE.** Cool to 45-50°C in a water bath. Dispense into sterile Petri dishes.

Quality Control

Dehydrated Appearance: Very light buff to pink, free-flowing, homogeneous.

Prepared Appearance: Red-orange, slightly opalescent.

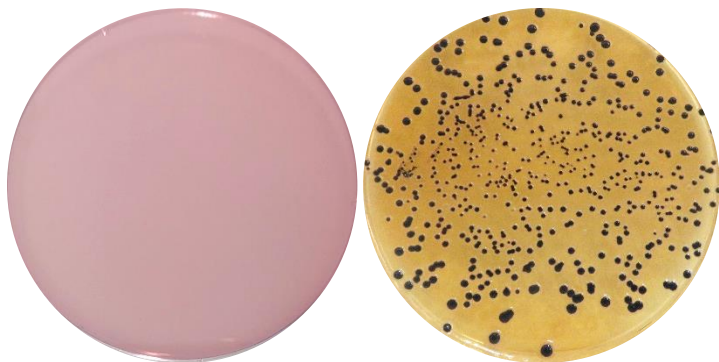
Reaction of 6.0% Solution at 25°C: pH 7.0 ± 0.2

Cultural Response

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

Organism (ATCC*)	Recovery	Colony color	H ₂ S
<i>Enterococcus faecalis</i> (29212)	Partial inhibition	Colorless	-
<i>Escherichia coli</i> (25922)	Partial inhibition	Pink to red	-
<i>Salmonella enterica</i> (14028)	Good	Colorless	+
<i>Shigella flexneri</i> (12022)	Fair to good	Colorless	-

*ATCC is a registered trade mark of the American Type Culture Collection.



Prepared culture media (left). *Salmonella* colonies develop black centers as a result of H₂S production.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.