SALMONELLA SHIGELLA AGAR

SSAG-IEP-500

- **Principle**

Salmonella Shigella Agar (SS Agar) is a selective and differential medium used for the isolation of Salmonella species and for the recovery of some Shigella species from clinical and non-clinical specimens. The formulation is designed to suppress competing intestinal flora while allowing the growth and differentiation of enteric pathogens based on lactose fermentation and hydrogen sulphide production.

The medium contains proteose peptone and meat extract as sources of nitrogen, carbon, amino acids, vitamins and other essential growth factors. Lactose is included as the fermentable carbohydrate to differentiate lactose-fermenting organisms from non-fermenters. Selectivity is provided by a combination of bile salts, sodium citrate and brilliant green, which inhibit Gram-positive organisms and reduce the growth of many coliform bacteria.

Sodium thiosulphate is included as a sulphur source and, together with ferric citrate, allows detection of hydrogen sulphide production. Organisms capable of producing hydrogen sulphide reduce thiosulphate, leading to the formation of black-centred colonies due to the precipitation of iron sulphide. Neutral red functions as the pH indicator for lactose fermentation. Lactose fermenters produce acid, resulting in red or pink colonies, whereas non-lactose fermenting organisms such as Salmonella typically produce colourless colonies with or without black centres. Agar serves as the solidifying agent.

- **Regulatory compliance**

This product is manufactured under a quality management system in accordance with ISO 9001 and ISO 13485, and its formulation and quality control comply with applicable international standards, such as ISO 11133, where relevant.

- **Composition**

Ingredients	**g/L**
Proteose peptone	5.00
Meat extract#	5.00
Lactose	10.00
Bile salts mixture	8.50
Sodium citrate	8.50
Sodium thiosulphate	8.50
Ferric citrate	1.00
Neutral red	0.025
Brilliant green	0.033
Agar	13.50

- **Preparation**

Dissolve 60 grams in 1,000 ml distilled water. Boil to dissolve the medium completely for sterilization. DO NOT AUTOCLAVE, cool it to 42-45 °C and distribute aseptically into the plates. Ensure complete solidification and inoculate aseptically.

- **Applications and use**

Recommended for the selective isolation and presumptive differentiation of Salmonella species and certain Shigella species from clinical specimens, food products, water and environmental samples. It is commonly used as a plating medium following pre-enrichment and/or selective enrichment steps in routine detection workflows, and for screening mixed cultures where suppression of competing enteric flora is required prior to confirmation by biochemical and serological tests.

- **Quality control**

Solubility	w/o rests
Appearance	Fine powder
Colour of the dehydrated medium	Beige-pinkish
Colour of the prepared medium	Red-orange
Final pH (25 °C)	7.0 ± 0.2

- **Microbiological test**

Inoculum 50-100 CFU.

Microorganism	ATCC	Growth	Recovery	Colour
Salmonella typhimurium	14028	Luxuriant	≥ 60%	Colourless with black centre
Salmonella enteritidis	13076	Luxuriant	≥ 60%	Colourless with black centre
Shigella flexneri	9199	Luxuriant	≥ 60%	Colourless
Escherichia coli	8739	Fair	≥ 30%	Pink to colourless with bile precipitate
Enterococcus faecalis	14506	Poor	≥ 10%	Colourless

- **Storage**

The product is highly hygroscopic; keep the container always closed and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Temp. Min.:2 °C Temp. Max.:25 °C.

Note: Sterilize media immediately after reconstitution.

- **Bibliography**

Atlas, R. M. (2005). Handbook of media for environmental microbiology. CRC press.

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Rand, M. C., Arnold E. Greenberg, and Michael J. Taras, (1976), Standard methods for the examination of water and wastewater. Prepared and published jointly by American Public Health Association, American Water Works Association, and Water Pollution Control Federation.

Wehr H. M. and Frank J. H., (2004), Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

- **Product use limitation**

This product is developed, designed and supplied exclusively for research use only. It is not intended for diagnostic applications or drug development, and it is not suitable for administration to humans or animals.