

TECHNICAL DATA SHEET

SIM Medium

(Sulfite Indole Motility Medium)

Principle

SIM Medium used for differentiation of enteric bacteria on basis of three different characteristics, H₂S Production, motility and Indole production. The media is composed of special peptone, peptone, peptonized iron, sodium thiosulphate and agar. Peptone and special peptone provide nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and other essential nutrients. Special peptone contains tryptophan, which is degraded by specific bacteria to produce Indole. The Indole is detected by the addition of chemical reagents following the incubation period. Peptonized iron and sodium thiosulphate are the indicators of H₂S production. This H₂S reacts with peptonized iron to form black precipitate of ferrous sulphide. Motile organisms exaggerate the H₂S reaction. Motile organisms grow away from line of inoculation showing diffused growth while non-motile organisms grow along the stab line. Motility detection is possible due to the semisolid nature of the medium. Growth radiating out from the central stab line indicates that the test organism is motile.

Use: For the determination of hydrogen sulphide production, indole formation & motility of enteric bacilli.

Contents*

Ingredients	Gram/Litre
Special peptone	3.000
Peptone	30.000
Peptonized iron	0.200
Sodium thiosulphate	0.025
Agar	3.000
pH (at 25°C)	7.3 ±0.2

*** Formula adjusted for optimum performance and parameters**

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Directions: Dissolve 36.225 grams in 1000 ml purified / distilled water. Heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Distribute aseptically in test tubes and allow to cool to 40°C in an upright position.

Specimens types analyzed

Pure cultures or isolated microorganisms.

Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Homogeneous Light beige colored free flowing powder
Gelling	semi solid, comparable with 0.3% Agar
Color and clarity of set medium	Light amber colored, opalescent, semi solid gel
Reaction of 3.6 % w/v aqueous solution	pH: 7.3 $\pm$ 0.2 at 25°C.
pH	7.10– 7.50 at 25°C
Growth Promotion Properties	Best at $\leq$ 100 CFU at 32-38°C for 18-48 h
Indicative Properties	Optimum at $\leq$ 100 CFU at 32-38°C for 18-48 h

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Different Microbial Response: Cultural characteristics observed after incubation at 35±2°C for 18-24 hours. Inoculum 50-110 CFU.

Organism	ATCC	Growth	Motility	Indole reaction	H2S production
<i>Escherichia coli</i>	8739	Luxuriant	Positive	Positive	Negative
<i>Salmonella typhimurium</i>	14028	Luxuriant	Positive	Negative	Positive
<i>Shigella flexneri</i>	9199	Luxuriant	Negative	Negative	Negative

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times 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.

Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
2. Ewing W. H., (1986), Edwards and Ewings Identification of Enterobacteriaceae, 4th Ed., Elsevier Science Publishing Co., Inc. New York.
3. MacFaddin J. F., (1985), Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

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