

SIM Medium

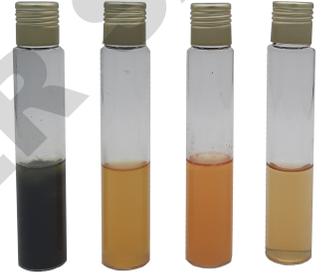
Cat. 1514

For the identification and differentiation of Enterobacteriaceae

Practical information

Applications	Categories
Differentiation	Enterobacteria

Industry: Water / Food



Principles and uses

SIM Medium is a semisolid medium used for the differentiation of enteric bacteria through sulfide production, indole formation and motility. The sulfur reduction test is useful in differentiating enteric organisms, especially Salmonella and Shigella. The indole test is used for differentiating the Enterobacteriaceae. The motility test is useful for testing a wide variety of organisms. The medium is also useful in the differentiation of Klebsiella from Enterobacter and Serratia species.

Casein and Meat peptones provide nitrogen, vitamins, minerals and amino acids essential for growth. Casein peptone is rich in tryptophan which is reduced and produces indole. Sodium thiosulfate provides Sulphur and Ferric ammonium citrate is the indicator for H₂S production under alkaline conditions. Bacteriological agar is the solidifying agent in a low-concentration to enable the motility to be seen.

Formula in g/L

Bacteriological agar	3,5	Casein peptone	20
Meat peptone	6,1	Sodium thiosulfate	0,2
Ferric ammonium sulfate	0,2		

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

Preparation

Suspend 30 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes.

Instructions for use

- Inoculate the pure culture by stabbing to a depth of 3/4 of the tube.
- Incubate at 35 ± 2°C for 18–24 hours and read the results.
- Darkening indicates the production of H₂S. Motility is indicated by a diffuse turbidity away from the line of inoculation. Growth only along the inoculation line indicates non-motility.
- The presence of indole is tested by adding Kovac's Reagent (Cat. 5205) giving a purple-red coloration to the reagent.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Amber, slightly opalescent	7,3 ± 0,2

Microbiological test

Incubation conditions: (35±2 °C / 18-24 h)

Microorganisms	Specification	Characteristic reaction
Shigella flexneri ATCC 12022	Good growth	H2S (-), Indole (-), Motility (-)
Salmonella typhimurium ATCC 14028	Good growth	H2S (+), Indole (-), Motility (+)
Escherichia coli ATCC 25922	Good growth	H2S (-), Indole (+), Motility (+)

Storage

Temp. Min.:2 °C
Temp. Max.:25 °C

Bibliography

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Greene, Bilum de Cora, Fairchail, Kaplan, Landau and Sharp. J. Bact. 63:347. 1951.
Harrigan WF. And MacCarice ME (1966) Laboratory Methods in Microbiology Academic Press., 53.