



INTENDED USE

For determination of hydrogen sulphide production, indole formation and motility of enteric bacilli

COMPOSITION

Ingredients	Gms/Ltr.
Peptone	30.000
Beef extract	3.000
Agar	3.000
Peptonized iron	0.200
Sodium thiosulphate	0.025

PRODUCT SUMMARY AND EXPLANATION

SIM Medium is used to differentiate enteric bacilli particularly *Salmonella* and *Shigella* on the basis of sulphide production, indole formation and motility. Jordan and Victorson reported that *Salmonella* paratyphi A and paratyphi B can be distinguished on the basis of H₂S production using lead acetate. Sulkin and Willett used Triple Sugar Iron Agar with 1% agar for motility along with H₂S production and carbohydrate fermentation. Sosa described a peptone medium with low agar for motility and indole determination. Greene et al. used SIM Medium to detect motility in a large series of cultures of typhoid organisms

PRINCIPLE

Peptonized iron and sodium thiosulphate are the indicators of H₂S production. This H₂S reacts with peptonized iron to form black precipitate of ferrous sulphide. Peptone and Beef extract provides nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and other essential nutrients. Tryptophan from peptone, is degraded by specific bacteria to produce indole. The indole is detected by the addition of chemical reagents following the incubation period. SIM Medium is a semi-solid, due to the low concentration of agar. The semi-solid nature of this medium allows for easy visual determination of motility which appears as growth extending outward from the original line of inoculation.

INSTRUCTION FOR USE

1. Dissolve 36.23 grams in 1000 ml distilled water.
2. Gently heat to dissolve the medium completely.

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3. Dispense in tubes and sterilize by autoclaving at 15 psi (121°C) for 15 minutes.
4. Allow the tubes to cool in an upright position.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder: Cream to beige colour, homogeneous free flowing powder

Appearance of prepared medium: Medium amber colour, slightly opalescent gel
pH (at 25°C): 7.3 ± 0.2

INTERPRETATION:

Cultural characteristics observed after incubation period of 18 - 24 hours at 35 ± 2°C.

Microorganisms	ATCC	Inoculum (CFU)	Growth	Indole	Motility	H ₂ S
<i>Escherichia coli</i>	25922	50-100	Luxuriant	positive reaction, red ring at the interface of the medium	positive, growth away from stabline causing turbidity	Negative Reaction
<i>Salmonella typhimurium</i>	14028	50-100	Luxuriant	Negative Reaction	positive, growth away from stabline causing turbidity	positive reaction, blackening of medium
<i>Shigella flexneri</i>	12022	50-100	Luxuriant	Negative Reaction	Negative, growth along the stabline, surrounding medium remains clear	Negative Reaction
<i>Klebsiella pneumoniae</i>	13883	50-100	Luxuriant	Negative Reaction	negative, growth along the stabline, surrounding medium remains clear	Negative Reaction

STORAGE & STABILITY

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

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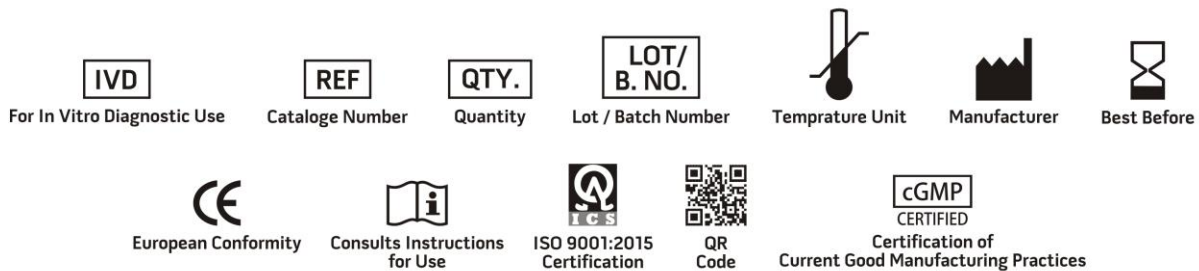


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REFERENCES

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2. Ewing W. H., 1986, Edwards and Ewings Identification of Enterobacteriaceae, 4th Ed., Elsevier Science Publishing Co., Inc. New York.
3. Greene, R. A., E. F. Blum, C. T. Decoro, R. B. Fairchild, M. T. Kapla, J. L. Landau, and T. R. Sharp. 1951. Rapid method for the detection of motility. J. Bact. 62:347.
4. Jordan E. O. and Victorson R., 1917, J. Inf. Dis., 21:554.
5. Sulkin S. E. and Willett J. C., 1940, J. Lab. Clin. Med., 25:649.
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NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.