TM 847 - SIM MEDIUM

INTENDED USE

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

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 H_2S production using lead acetate. Sulkin and Willett used Triple Sugar Iron Agar with 1% agar for motility along with H_2S production and carbohydrate fermentation. Sosa described a peptone medium with low agar for motility and indole determination.

SIM Medium enables determination of three characteristics by which enteric bacteria can be differentiated. Motile organisms intensify the H_2S 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. Inoculate fresh culture with a single stab using straight needle through the center of the medium. Following incubation, observe for motility (diffuse growth outward from the stab line or turbidity throughout the medium) and for H_2S production (blackening of the medium). To detect indole production, add three or four drops of Kovacs reagent and observe for development of red color (positive reaction). Determine motility and H_2S production prior to determination of indole production.

COMPOSITION

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

PRINCIPLE

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. Peptonized iron and sodium thiosulphate are the indicators of H_2S production. This H_2S reacts with peptonized iron to form black precipitate of ferrous sulphide.

INSTRUCTION FOR USE

- Dissolve 36.23 grams in 1000 ml purified/ distilled water
- Heat to boiling to dissolve the medium completely
- Dispense in tubes. Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes
- Allow the tubes to cool in an upright position.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Cream to beige homogeneous free flowing powder.
Appearance of prepared medium	: Medium amber coloured slightly opalescent gel forms in tubes as butts.
pH (at 25°C)	: 7.3±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Motility	Indole production (on addition of Kovac's)	H_2S	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Luxuriant	Positive, growth away from stabline causing turbidity	Positive reaction, red ring at the interface of the medium	Negative reaction	35-37°C	18-24 Hours
Salmonella Typhimurim	14028	50-100	Luxuriant	Positive, growth away from stabline causing turbidity	Negative reaction	Positive reaction, blackening of medium	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Luxuriant	Negative, growth along the stabline, surrounding medium remains clear	Negative reaction	Negative reaction	35-37°C	18-24 Hours
Salmonella Paratyphi A	9150	50-100	Luxuriant	Positive, growth away from stabline causing turbidity	Negative reaction	Negative reaction	35-37°C	18-24 Hours
Salmonella Paratyphi B	8739	50-100	Luxuriant	Positive, growth away from stabline causing turbidity	Negative reaction	Positive reaction, blackening of medium	35-37°C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Luxuriant	Negative, growth along the stabline, surrounding medium remains clear	Negative reaction	Negative reaction	35-37°C	18-24 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°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.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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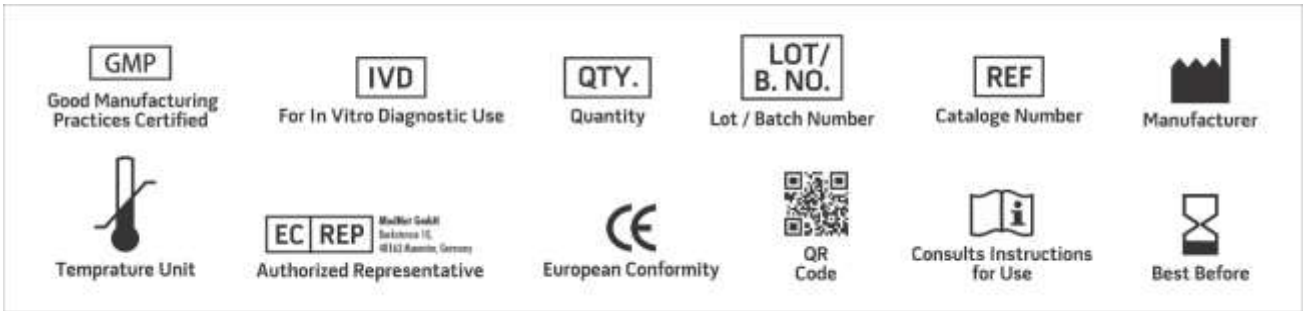

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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