TM 859 - SORBITOL IRON AGAR

INTENDED USE

For identification and differentiation of enteropathogenic *E. coli* without fermenting sorbitol.

PRODUCT SUMMARY AND EXPLANATION

Escherichia coli is the most common bacterium isolated in clinical samples, the most prevalent facultative gram-negative rods in faeces, the most common cause of urinary tract infection and a common cause of both intestinal and extra-intestinal infections. Strains of *E. coli* that are primary intestinal pathogens of man are described in four groups namely Enterotoxigenic *E. coli* (ETEC), Enteroinvasive *E. coli* (EIEC), Verocytotoxin-producing *E. coli* (VTEC) and Enteropathogenic *E. coli* (EPEC). EPEC causes infantile diarrhea.

Sorbitol Iron Agar is a differential tube medium described by Rappaport and Henig. It is a modification of Kligler Iron Agar where dextrose and lactose is substituted with D-sorbitol. The pathogenic strain of *E. coli* is identified on the basis of inability to ferment sorbitol and hydrogen sulfide production.

Colourless colonies from Sorbitol Agar are inoculated into Sorbitol Iron Agar by stabbing the butts and streaking the slants. After 18-24 hours, freshly isolated pathogenic strains of *E. coli* show neither acid nor blackening of the medium. *Proteus* species may or may not blacken the medium, may produce acid in the butt; and on transfer to urease test medium, will give a positive urease test. Ordinary strains of *E. coli* produce acid and gas on Sorbitol Iron Agar, some pathogenic strains after laboratory cultivation may develop the capacity to ferment sorbitol and produce acid. Subsequently transfer of such cultures on Kligler Iron Agar or Triple Sugar Iron Agar, Urease Test Medium will help in identification.

COMPOSITION

Ingredients	Gms / Ltr
Beef extract	3.000
Proteose peptone	15.000
D-Sorbitol	2.000
Sodium chloride	5.000
Ferric ammonium citrate	0.500
Sodium thiosulphate	0.500
Phenol red	0.030
Agar	20.000

PRINCIPLE

Proteose peptone and beef extract in the medium provide carbon, nitrogen, vitamins and minerals required for the growth of organisms. D-Sorbitol is the fermentable carbohydrate source. Sodium chloride provides essential ions. The combination of ferric ammonium citrate and sodium thiosulphate enables the detection of hydrogen sulphide production, which is evidenced by a black colour formation. Phenol red is the pH indicator, detecting the fermentation of sorbitol and subsequent formation of acidic conditions.

INSTRUCTION FOR USE

- Dissolve 46.03 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Dispense in test tubes and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Allow the tubes to cool in a slanted position.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to pink homogeneous free flowing powder.

Appearance of prepared medium : Red coloured clear to slightly opalescent gel forms in tubes as slants.

pH (at 25°C) : 7.6±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Sorbitol	H2S	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Luxuriant	Positive reaction, yellow colour with gas formation	Negative reaction	35-37°C	18-24 Hours
Enterobacter aerogenes	13048	50-100	Luxuriant	Positive reaction, yellow colour	Negative reaction	35-37°C	18-24 Hours
Enterococcus faecalis	29212	50-100	Luxuriant	Positive reaction, yellow colour	Negative reaction	35-37°C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Luxuriant	Positive reaction, yellow colour	Negative reaction	35-37°C	18-24 Hours
Proteus vulgaris	13315	50-100	Luxuriant	Negative reaction	positive reaction, blackening of medium	35-37°C	18-24 Hours
Salmonella Typhimurium	14028	50-100	Luxuriant	Positive reaction, yellow colour	positive reaction, blackening of medium	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Luxuriant	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.

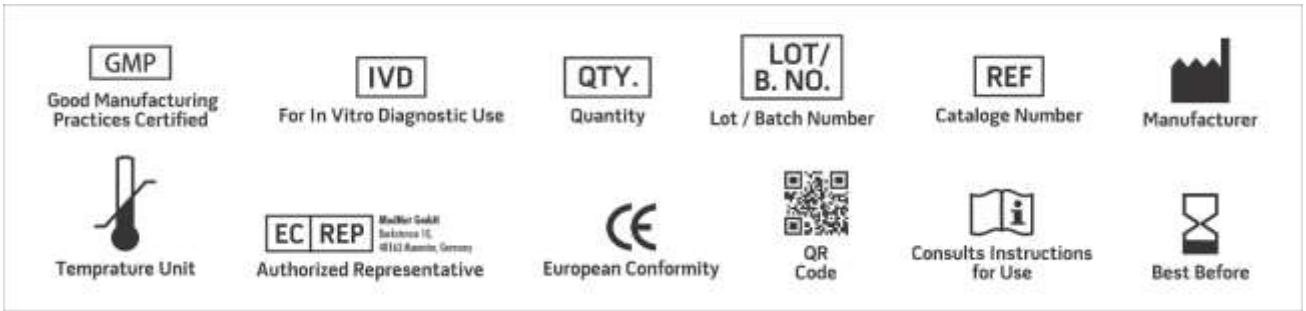
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

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

REFERENCES

1. Rappaport F. and Henig E., 1952, J. Clin. Pathol., 5:361.
2. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1996, 14th Edition, Churchill Livingstone.



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

***For Lab Use Only**

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