TM 2359 – TS SALINE AGAR (TRIPLE SUGAR SALINE IRON AGAR)

INTENDED USE

For identification of *Vibrio* species especially *Vibrio parahaemolyticus* on the basis of dextrose, lactose and sucrose fermentation and hydrogen sulphide production.

PRODUCT SUMMARY AND EXPLANATION

TS Saline Agar (Triple Sugar Saline Iron Agar) is in accordance with ISO 8914:1990 recommended for identification of Vibrio parahaemolyticus. Organisms that ferment glucose produce a variety of acids, turning the colour of the medium from red to yellow. More amount of acids liberated in butt (fermentation) than in the slant (respiration). Growing bacteria also form alkaline products from the oxidative decarboxylation of peptone and these alkaline products neutralize the large amounts of acid present in the butt. Thus the appearance of an alkaline (red) slant and an acid (yellow) butt after incubation indicates that the organism is a glucose fermenter but is unable to ferment lactose and/or sucrose. Bacteria that ferment lactose or sucrose (or both), in addition to glucose, produce large amounts of acid enables no reversion of pH in that region and thus bacteria exhibit an acid slant and acid butt. Gas production (CO_2) is detected by the presence of cracks or bubbles in the medium, when the accumulated gas escapes. Thiosulphate is reduced to hydrogen sulphide by several species of bacteria and H_2S combines with ferric ions of ferric salts to produce the insoluble black precipitate of ferrous sulphide. Reduction of thiosulphate proceeds only in an acid environment and blackening usually occurs in the butt of the tube.

Alkaline slant / acid butt - only glucose fermented

Acid slant / acid butt - glucose and sucrose fermented or glucose and lactose fermented or all the three sugars, glucose, lactose and sucrose fermented.

Bubbles or cracks present - gas production Black precipitate present - H_2S gas production.

COMPOSITION

Ingredients	Gms / Ltr
Peptic digest of animal tissue	20.000
Meat extract	3.000
Yeast Extract	3.000
Sodium chloride	30.000
Lactose	10.000
Sucrose	10.000
Glucose	1.000
Ferric citrate	0.300
Phenol red	0.024
Sodium thiosulfate	0.300
Agar	15.000

PRINCIPLE

Peptic digest of animal tissue, meat extract and yeast extract provide nitrogenous compounds, sulphur, trace elements and vitamin B complex etc. Sodium chloride maintains osmotic equilibrium. Lactose, sucrose and glucose are the fermentable carbohydrates. Sodium thiosulphate and ferric ions make H_2S indicator system. Phenol red is the pH indicator.

INSTRUCTION FOR USE

- Suspend 92.62 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Mix well and distribute into test tubes.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 10 minutes.
- Allow the medium to set in a sloping position to give a butt of depth about 2.5cm.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to pink homogeneous free flowing powder.
Appearance of prepared medium : Pinkish red coloured clear to slightly opalescent gel forms in tubes as slants.
pH (at 25°C) : 7.4±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Butt	Gas	H_2S	Slant	Incubation Temperature	Incubation Period
Citrobacter freundii	8090	50-100	Luxuriant	acidic reaction, yellowing of the medium	positive reaction	positive, blackening of medium	acidic reaction, yellowing of the medium	35-37°C	18-24 Hours
Enterobacter aerogenes	13048	50-100	Luxuriant	acidic reaction, yellowing of the medium	positive reaction	negative, no blackening of medium	acidic reaction, yellowing of the medium	35-37°C	18-24 Hours
Escherichia coli	25922	50-100	Luxuriant	acidic reaction, yellowing of the medium	positive reaction	negative, no blackening of medium	acidic reaction, yellowing of the medium	35-37°C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Luxuriant	acidic reaction, yellowing of the medium	positive reaction	negative, no blackening of medium	acidic reaction, yellowing of the medium	35-37°C	18-24 Hours
Proteus vulgaris	13315	50-100	Luxuriant	acidic reaction, yellowing of the medium	positive reaction	positive, blackening of medium	alkaline reaction, red colour of the medium	35-37°C	18-24 Hours
Salmonella Paratyphi A	9150	50-100	Luxuriant	acidic reaction, yellowing of the medium	positive reaction	negative, no blackening of medium	alkaline reaction, red colour of the medium	35-37°C	18-24 Hours
Salmonella Typhi	6539	50-100	Luxuriant	acidic reaction, yellowing of the medium	negative reaction	positive, blackening of medium	alkaline reaction, red colour of the medium	35-37°C	18-24 Hours

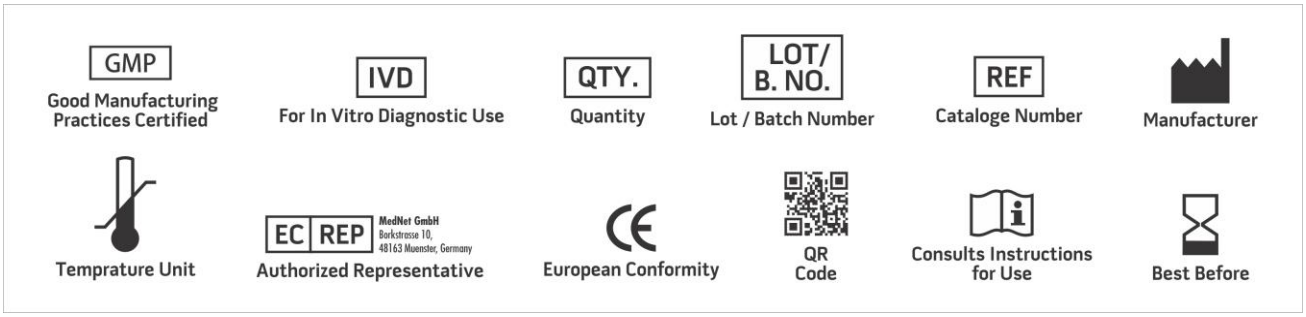
Salmonella Typhimurium	14028	50-100	Luxuriant	acidic reaction, yellowing of the medium	positive reaction	positive, blackening of medium	alkaline reaction, red colour of the medium	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Luxuriant	acidic reaction, yellowing of the medium	negative reaction	negative, no blackening of medium	alkaline reaction, red colour of the medium	35-37°C	18-24 Hours
Escherichia coli	8739	50-100	Luxuriant	acidic reaction, yellowing of the medium	positive reaction	negative, no blackening of medium	acidic reaction, yellowing of the medium	35-37°C	18-24 Hours
Klebsiella pneumoniae	10031	50-100	Luxuriant	acidic reaction, yellowing of the medium	positive reaction	negative, no blackening of medium	acidic reaction, yellowing of the medium	35-37°C	18-24 Hours
Vibrio parahaemolyticus	17802	50-100	Luxuriant	acidic reaction, yellowing of the medium	negative reaction	negative, no blackening of medium	alkaline reaction, red colour of the medium	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. International Organization for Standardization (ISO), 8914:1990.



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

***For Lab Use Only**

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