TM 2056 – DOUBLE MODIFIED LYSINE IRON AGAR BASE

INTENDED USE
For selective and differential cultivation of *Salmonella* species.

PRODUCT SUMMARY AND EXPLANATION
Salmonella is the main agent of foodborne diseases in several parts of the world, belonging to the family *Enterobacteriaceae*. Most serovars, however, have a wide spectrum of hosts and typically cause gastroenteritis.
Double Modified Lysine Iron Agar is used to for isolation and identification of *Salmonella* from food. Salmonellae are known to decarboxylate lysine rapidly and produce large amounts of hydrogen sulphide. Many strains of this group ferment lactose very rapidly thus suppressing H_2S production on Triple Sugar Iron Agar. So there is a possibility that the organisms frequently found in food poisoning outbreaks could be overlooked. Thatcher and Clark described the isolation of *Salmonella* species from foods from selective agar and to inoculate it on Lysine Iron Agar and Triple Sugar Iron together. Using these two media greater discrimination can be made between coliform organisms e.g. *Escherichia* and *Shigella*.

COMPOSITION

Ingredients	Gms / Ltr
Peptic digest of animal tissue	5.000
Yeast extract	3.000
Dextrose	1.000
L-Lysine	10.000
Ferric ammonium citrate	0.800
Sodium thiosulphate	6.800
Bile salt	1.500
Lactose	10.000
Sucrose	10.000
Bromocresol purple	0.020
Agar	15.000

PRINCIPLE
The medium consists of Peptic digest of animal tissue and yeast extract that provide essential nutrients. Dextrose is a source of fermentable carbohydrate. Ferric ammonium citrate and sodium thiosulphate are indicators of H_2S formation. Cultures that produce hydrogen sulphide cause blackening of the medium due to ferrous sulphide production. Lysine decarboxylation causes an alkaline reaction (purple colour) to give the amine cadaverine and the organisms which do not decarboxylate lysine, produce acid butt (yellow colour). Organisms that deaminate lysine, form a - ketocarboxylic acid, which reacts with iron salt near the surface of the medium under the influence of oxygen to form reddish-brown compound.

INSTRUCTION FOR USE
- Dissolve 63.12 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE.
- Cool to 45-50°C and aseptically add rehydrated contents of 1 vial of Novobiocin supplement.
- Mix well and dispense into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to greyish yellow homogeneous free flowing powder.
Appearance of prepared medium : Purple coloured clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C) : 6.7 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
Citrobacter freundii	8090	50-100	Luxuriant	>=70%	Yellow	35-37°C	18-24 Hours
Escherichia coli	25922	50-100	Luxuriant	>=70%	Yellow	35-37°C	18-24 Hours
Proteus mirabilis	25933	50-100	Luxuriant	>=70%	Red with black center	35-37°C	18-24 Hours
Salmonella Arizonae	13314	50-100	Luxuriant	>=70%	Purple with black center	35-37°C	18-24 Hours
Salmonella Enteritidis	13076	50-100	Luxuriant	>=70%	Purple with black center	35-37°C	18-24 Hours
Salmonella Typhimurium	14028	50-100	Luxuriant	>=70%	Purple with black center	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Luxuriant	>=70%	Colourless	35-37°C	18-24 Hours

PACKAGING:

In pack size of 100 gm and 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. Microbiology Laboratory guidebook,MLG/FSIS/USDA (2011),Washington,Food Safety and Inspection Service.
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4. Thatcher F.S. and Clark D.S., 1968, University of Toronto Press, p. 100.
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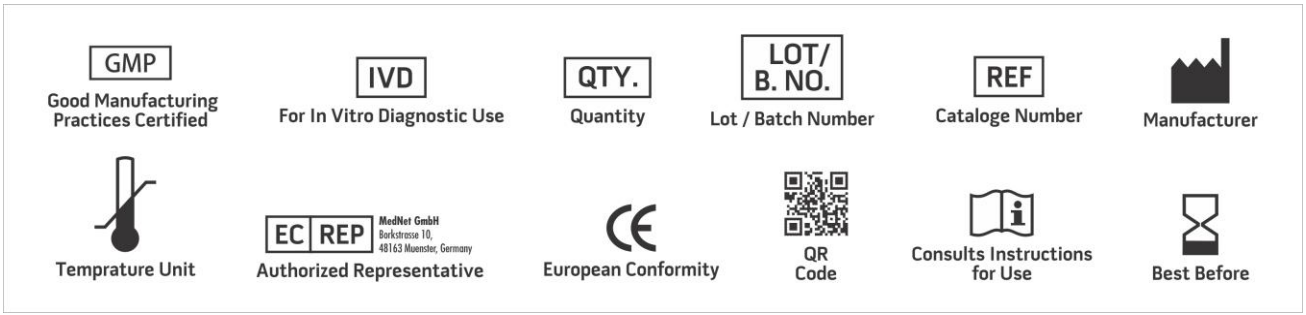

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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