# Product Data Sheet

**MANNITOL LYSINE AGAR**
**Product No.** GB-DCM-00408-1A

## INTENDED USE
For selective isolation of Salmonellae other than Salmonella Typhi and Salmonella paratyphi A.

## PRODUCT SUMMARY
Human Salmonella infections are most commonly caused by ingestion of food, water or milk contaminated by human or animal excreta. One of the most important criteria in the identification of Salmonella species is the production of hydrogen sulphide. Salmonella Typhi and Salmonella Paratyphi A can be differentiated from the rest of the Salmonella due to their inability to form hydrogen sulphide. Mannitol Lysine Agar, formulated as described by Inoue et al is used for the selective isolation of Salmonella species other than Salmonella Typhi and Salmonella Paratyphi A form different foods and faeces. Mannitol Lysine Agar may be used directly with the specimen or from an enrichment culture. Enrichment can be carried out in Modified Semisolid RV Medium. Mannitol Lysine Agar does not depend upon lactose fermentation and is therefore recommended for investigating lactose fermenting Salmonellae like Salmonella Arizonae. Further tests should be carried out for confirming Salmonella species. Mannitol Lysine Medium should be used in conjunction with Brilliant Green Agar, Modified or Bismuth Sulphite Agar. Mannitol Lysine Medium can be directly inoculated with the specimen or the specimen can be first enriched in Modified Semisolid RV Medium Base. Atypical Salmonella will form a characteristic bulls eye due to less H2S production, which gets concentrated in the centre of the colony. Salmonella colonies will form purple black colonies. Presumptive Salmonella should be confirmed by biochemical tests.

## PRINCIPLE
Peptone, Beef extract, yeast extract provides essential nutrients for the growth of Salmonella. Mannitol is the fermentable carbohydrate in the medium while L-lysine is the amino acid. Salmonellae grow as large purple colony with black center because of H2S production. Mannitol is fermented by organisms and the resulting acid stimulates lysine decarboxylation. This elevates the pH due to production of amines and promotes blackening. Sodium thiosulphate and ferric ammonium citrate help in H2S production. Atypical Salmonella strains do not produce H2S and form grey colonies. Brilliant green dye in the medium inhibits gram-positive and majority of gram-negative organisms.

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## Product Specifications

| Ingredients | Gms / Ltr |
|---|---|
| Peptone | 10.000 |
| Yeast extract | 5.000 |
| Beef extract | 2.000 |
| Sodium chloride | 4.000 |
| Mannitol | 3.000 |
| L-Lysine hydrochloride | 5.000 |
| Sodium thiosulphate | 4.000 |
| Ferric ammonium citrate | 1.000 |
| Brilliant green | 0.0125 |
| Crystal violet | 0.010 |
| Agar | 15.000 |

### INSTRUCTION FOR USE

- Dissolve 49.02 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely. Do not autoclave.
- Cool to 45-50°C. Mix well and pour into sterile Petri plates.

### UALITY CONTROL SPECIFICATIONS

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

Appearance of prepared medium: Yellow with purple coloured tinge clear to slightly opalescent gel forms in Petri plates.

pH (at 25°C) : 6.8± 0.2

### 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.

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| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | **Recovery** | **Colour of colony** | Incubation Temperature | Incubation Period |
|---|---|---|---|---|---|---|---|
| Escherichia coli | 25922 | >=$10^3$ | Inhibited | >=0% | - | 35-37°C | 18-48 Hours |
| Salmonella Paratyphi B | 8759 | 50-100 | Luxuriant | >=50% | Purple with black center | 35-37°C | 18-48 Hours |
| Salmonella Typhi | 6539 | 50-100 | None-poor | >=50% | Colourless with purple tinge, may have black centers | 35-37°C | 18-48 Hours |
| Salmonella Typhimurium | 14028 | 50-100 | Luxuriant | >=50% | Purple with black center | 35-37°C | 18-48 Hours |
| Bacillus cereus | 10876 | 50-100 | Luxuriant | <= 50% | Purple with black center | 35-37°C | 18-48 Hours |
| Staphylococcus aureus subsp. aureus | 25923 | >=$10^3$ | Inhibited | 0% | - | 35-37°C | 18-48 Hours |

**DISPOSAL**

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

**This product is for research use only.**

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