# SM Selective Agar Base

**M1289**

SM Selective Agar Base is used for the isolation and cultivation of *Pseudomonas solanacearum* .

## Composition**

| Ingredients | Gms / Litre |
|---|---|
| Mannitol | 2.500 |
| L-Glutamic acid | 1.000 |
| Magnesium sulphate, 7H2O | 0.160 |
| Manganese sulphate, H2O | 0.310mg |
| Potassium phosphate, monobasic | 0.027mg |
| Zinc sulphate, 7H2O | 0.550mg |
| Ferric ammonium sulphate, 6H2O | 0.090mg |
| Copper sulphate, 5H2O | 0.010mg |
| Calcium sulphate, 5H2O | 0.010mg |
| Phosphoric acid | 0.005mg |
| Potassium iodide | 0.000006mg |
| Agar | 15.000 |
| Final pH ( at 25°C) | 7.0±0.2 |

**Formula adjusted, standardized to suit performance parameters

## Directions

Suspend 18.66 grams in 990 ml distilled water. Mix thoroughly. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add sterile rehydrated contents of 1 vial of SM Selective Supplement (FD122) and 10 ml of TTC Solution, 1% (FD057). Mix well and pour into sterile Petri plates or as desired.

## Principle And Interpretation

Phytopathogenic pseudomonads are a very diverse group of bacteria with respect to their genetics, ecology and the kinds of disease they cause. Some of the worlds most serious bacterial diseases are caused by pseudomonads such as *Pseudomonas solanacearum* (1).

The bacterium *P. solanacearum* is the causative agent of bacterial wilt in plants and is the most important and widely spread bacterial diseases of crops in the tropic, subtropics and warm temperate regions of the world (2). SM Selective Agar Base is recommended for isolation and cultivation of *P. solanacearum* (3).

*P. solanacearum* is a plant pathogen and utilizes mannitol as carbon source. The various salts added in trace amounts enhance the growth of *P. solanacearum* , while antibiotic solution serves to inhibit contaminating heterotrophic microflora from samples. The dye 2, 3, 5-triphenyl tetrazolium chloride (TTC) is used as indicator of oxidation-reduction state of the medium. *P. solanacearum* being highly oxidative, its colony takes up the pink colour of the oxidized dye.

## Quality Control

**Appearance**
Cream to yellow homogeneous free flowing powder

**Gelling**
Firm, comparable with 1.5% Agar gel

**Colour and Clarity of prepared medium**
Light yellow coloured opalescent gel forms in Petri plates

**Reaction**
Reaction of 1.87% w/v aqueous solution at 25°C. pH : 7.0±0.2

**pH**

6.80-7.20

**Cultural Response**

M1289: Cultural characteristics observed after an incubation at 30°C for 48 hours with added SM Selective Supplement (FD122) and 10ml of TTC Solution 1% (FD057).

| Organism | Inoculum (CFU) | Growth | Recovery |
|---|---|---|---|
| **Cultural Response** | | | |
| *Pseudomonas aeruginosa ATCC 27853* | 50-100 | none-poor | <=10% |
| *Pseudomonas solanacearum ATCC 11696* | 50-100 | good-luxuriant | >=50% |

## Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

## Reference

1. Balows A., Truper H. G., Dworkin M., Harder W., Schleifer K. H., (Ed.), The Prokaryotes, 1992, 2nd Edition, Vol. III, Springer-Verlag.
2. Hayward A. C., 1991, Biology and epidemiology of bacterial wilt caused by Pseudomonas solanacearum, Ann. Rev. Phytopathol., 29:65-87.
3. Atlas R. M., Handbook of Microbiological Media, 1997, 2nd Edition, Edited by Lawrence C. Parks.

Revision : 02/ 2015