



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, 7H ₂ O	0.160
Manganese sulphate, H ₂ O	0.310mg
Potassium phosphate, monobasic	0.027mg
Zinc sulphate, 7H ₂ O	0.550mg
Ferric ammonium sulphate, 6H ₂ O	0.090mg
Copper sulphate, 5H ₂ O	0.010mg
Calcium sulphate, 5H ₂ O	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			
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	none-poor	<=10%
<i>Pseudomonas solanacearum</i> 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.

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