Glutamate Starch Phenol Red Agar Base M1089

Glutamate Starch Phenol Red Agar is used for detection of *Pseudomonas* and *Aeromonas* in foodstuffs, wastewater and equipment in food industry.

Composition**

Ingredients	Gms / Litre
L-Glutamate, sodium	10.000
Starch, soluble	20.000
Monopotassium phosphate	2.000
Magnesium sulphate	0.500
Phenol red	0.360
Agar	12.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 44.86 grams in 1000 ml distilled water. 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 and add 100 lU/ml Penicillin G, sodium salt and if desired 10 mcg/ml Pimaricin. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Aeromonas commonly contaminate fish and related seafood products since they occur widely in aquatic environment. Motile aeromonads have also been associated with refrigerated animal products such as chicken, beef, pork etc (1, 2, 3). The predominant organisms found in these foods are *Pseudomonas* species with the motile aeromonads present in low numbers (4). Glutamate Starch Phenol Red Agar Base is used for the detection of *Pseudomonas* and *Aeromonas* species in foodstuffs, waste water and equipment in the food industry. This medium is a modification of Korths Medium (5), as described by Keilwein (6).

Glutamate Starch Phenol Red Agar Base is based on the ability of *Aeromonas* to utilize starch with the subsequent production of acid, detected the pH indicator i.e. phenol red. Phenol red changes from red to yellow colour under acidic conditions. Pseudomonas does not utilize starch and therefore does not form yellow colonies. The medium is designed to support the growth of both *Pseudomonas* and *Aeromonas* species.

L-glutamate is a source of essential nutrients. Starch is the source of carbon. Phosphate buffers the medium whereas magnesium sulphate is a source of essential ions. Antibiotics help to improve the selectivity of the medium.

The medium may be surface inoculated or used in membrane filtration technique.

Quality Control

Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.2% Agar gel.

Colour and Clarity of prepared medium

Red coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.5% w/v aqueous solution at 25°C. pH : 7.2±0.2

Cultural Response

M1089: Cultural characteristics observed with added 100 IU Penicillin G, sodium salt and 10 mcg/ml Pimaricin after an incubation at 25-30°C for 48-72 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Starch hydrolysis		
Aeromonas hydrophila ATCC 7966	50-100	good-luxuriant	>=50%	positive reaction, acid production, yellow colour		
Pseudomonas aeruginosa ATCC 27853	50-100	good-luxuriant	>=50%	negative reaction,no		

				acid production		

Reference

1. Enfors S. O., Molin G. and Ternstrom A., 1979, J. Appl. Bacteriol., 47:197
2. Hunter P. R. and Burge S. H., 1987, Appl. Microbiol., 4:45
3. Kielwein G., Gerlach R. and Johne H., 1969, Areh Zebensmittelhyg., 20:34
4. Vanderzant C. and Splittstoesser D. (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C.
5. Korth H., 1963, Zbl. Backt. Parasit. Hyg. Abt. 190:225
6. Kielwein G., 1971, Arch. G. Lenensmillehyg. 22:29-37

Storage and Shelf Life

Store below 30°C and prepared medium at 2-8°C. Use before expiry period on the label.