MUG Tryptone Soya Agar

M1195

MUG Tryptone Soya Agar is used for cultivation of fastidious and non-fastidious microorganisms by fluorogenic method.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	15.000
Papaic digest of soyabean meal	5.000
Sodium chloride	5.000
4-Methylumbelliferyl ß-D-Glucuronide (MUG)	0.100
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 40.1 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. Mix well and pour into sterile Petri plates.

Principle And Interpretation

MUG Tryptone Soya Agar is used for cultivation of fastidious and non-fastidious microorganisms by fluorogenic method. The medium is rich in nutrients, which makes it suitable for cultivating aerobes as well as anaerobes. Tryptone Soya Agar is used as blood agar base as well as a reference medium when testing selective media to measure the degree of inhibition (1, 2). Tryptone Soya Agar with MUG is same as Tryptone Soya Agar with the addition of MUG, used to detect the organisms based on fluorescence.

Casein enzymic hydrolysate and papaic digest of soyabean meal provide nitrogenous and other growth nutrients. Organisms like *Escherichia coli* cleave MUG by the enzyme ß-glucuronidase to release 4-methylumbelliferone, a fluorogenic end product which produces a visible green-blue fluorescence under long wave UV light.

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 clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 4.01% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH
7.10-7.50

Cultural Response
M1195: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Fluorescence (under UV)
Cultural Response				
Bacillus subtilis ATCC 6633	50-100	luxuriant	>=70%	negative
Candida albicans ATCC 10231	50-100	luxuriant	>=70%	negative
Clostridium sporogenes ATCC 11437	50-100	luxuriant	>=70%	negative

Escherichia coli ATCC 25922	50-100	luxuriant	>=70%	positive
Neisseria meningitidis ATCC 13090	50-100	luxuriant	>=70%	negative
Staphylococcus aureus ATCC 25923	50-100	luxuriant	>=70%	negative
Staphylococcus epidermidis ATCC 12228	50-100	luxuriant	>=70%	negative
Streptococcus pneumoniae ATCC 6303	50-100	luxuriant	>=70%	negative
Streptococcus pyogenes ATCC 19615	50-100	luxuriant	>=70%	negative

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. Gillies R.R., 1964, J. Hyg. Camb., 62 : 1.
2. Anon, 1987, J. Food Microbiol., 5 : 291.

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