

## 17165 MUG Tryptone Soya Agar

MUG Tryptone Soya Agar is a general purpose culture medium for cultivation and isolation of fastidious or nonfastidious microorganisms by fluorogenic method. It is used for the precultivation and enumeration (*E. coli*) acc. to membrane-filter technique. It is suitable for the cultivation both of aerobes and anaerobes. As it does not contain the X and V factors, it is suitable for identification of *Haemophilus* sp. by adding X (Hemin) and V (DPN) factors strips. Recommended by the "Schweizerisches Lebensmittelbuch" 5<sup>th</sup> ed., chapter 56A.

### Composition:

Ingredients	Grams/Litre
Casein enzymic hydrolysate	15.0
Papaic digest of soyabean meal	5.0
Sodium chloride	5.0
Methylumbelliferyl- $\beta$ -D-glucuronide (MUG)	0.1
Agar	15.0
Final pH 7.3 +/- 0.2 at 25°C	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

### Directions:

Suspend 40.1 g in 1 litre distilled water. Boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 45-50°C. Mix gently and dispense into sterile Petri dishes or sterile culture tubes.

Check the plates under UV light at about 360-370 nm. Slightly blue fluorescence indicates the presence of *E. coli*. In addition the indole test can be made with Kovac's reagent (Fluka 60983). Cover a colony with 10-20  $\mu$ l Kovac's reagent. A change of color to red after 2-10 seconds indicates indole formation.

### Principle and Interpretation:

Casein enzymic hydrolysate and Papaic digest of soyabean meal provide nitrogen, vitamins and minerals. The natural sugars from Soya peptone promote bacterial growth. Sodium chloride assures osmotic balance.

The medium may also be used as a blood agar base. Add 7% of sterile blood to the sterile molten medium which has been cooled to approximately 45°C. Tryptone Soya Agar can also be used for the preparation of chocolate agar. Because MUG Tryptone Soya Agar contains no additional carbohydrates it may be used, by adding blood, for the determination of haemolysis. When supplemented with 0.7g lecithin (Fluka 61755) and 5g Polysorbate (Tween 80 Fluka 93780) per litre of MUG Tryptone Soya Agar, the medium can be used as Microbial Content Test Agar for quaternary ammonium compounds.

MUG Tryptone Soya Agar is recommended as a reference medium when testing selective media in order, to measure the degree of inhibition. A medium for isolation of *Bacteroides gracilis* is prepared from MUG Tryptone Soya Agar by adding formate (e.g. Sodium formate; Fluka 71540), fumarate (e.g. Sodium fumarate; Fluka 47970), and nitrate (e.g. Sodium nitrate; Fluka 71757). The medium is made selective using nalidixic acid (Fluka 70162) and teicoplanin.

*E. coli* can be detected under UV light.  $\beta$ -D-glucuronidase, which is produced by *E. coli*, cleaves 4-methylumbelliferyl- $\beta$ -D-glucuronide to 4-methylumbelliferone and glucuronide. The fluorogen 4-methylumbelliferone can be proved under a long wavelength UV lamp.

Cultural characteristics after 18-48 hours at 35°C (if necessary 76 hours).

Organisms (ATCC)	Growth	Fluorescence	Indole reaction
<i>Escherichia coli</i> (25922)	+++	+	+
<i>Staphylococcus aureus</i> (25923)	+++	-	-
<i>Streptococcus pneumoniae</i> (6305)	+++	-	-
<i>Streptococcus pyrogenes</i> (19615)	+++	-	-

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