

## 22091 Tryptic Soy Agar (Tryptone Soya Agar, TSA, CASO Agar, Soybean Casein digest Agar)

Tryptic Soy Agar is a general purpose culture medium for cultivation, isolation of fastidious or nonfastidious microorganisms or for maintenance of stock culture. 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 peptone (pancreatic)	15.0
Soya peptone (papainic)	5.0
Sodium chloride	5.0
Agar	15.0
Final pH 7.3 +/- 0.2 at 37°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 g of dehydrated media in 1 litre of purified filtered water. Sterilize at 121°C for 15 minutes. Cool to 45-50°C. Mix gently and dispense into sterile Petri dishes or sterile culture tubes.

### Principle and Interpretation:

Casein peptone and Soya peptone provide nitrogen, vitamins and minerals. The natural sugars from Soya peptone promote bacterial growth. Sodium chloride is for the 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 Tryptone Soya Agar contains no added carbohydrate it may be used, with added blood, in the determination of haemolysis. When supplemented with 0.7g lecithin (Fluka 61755) and 5g Polysorbate (Tween 80 Fluka 93780) per litre of Tryptone Soya Agar, the medium can be used as Microbial Content Test Agar for testing quaternary ammonium compounds. Tryptone Soya Agar is recommended as a reference medium when testing selective media, to measure the degree of inhibition. A medium for isolation of *Bacteroides gracilis* is prepared from 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.

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

Organisms (ATCC)	Growth
<i>Escherichia coli</i> (25922)	+++
<i>Staphylococcus aureus</i> (25923)	+++
<i>Streptococcus pneumoniae</i> (6305)	+++
<i>Streptococcus pyogenes</i> (19615)	+++

### References:

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## 22092 Tryptic Soy Broth (TSB, Tryptone Soya Broth, CASO Broth, Soybean Casein digest Broth, Casein Soya Broth)

The medium will support a luxuriant growth of many fastidious organisms without the addition of serum.

Used for confirmation of *Campylobacter jejuni* by means of the motility test. Recommended by the "Schweizerisches Lebensmittelbuch" 5<sup>th</sup> ed., chapter 56A, USP XXIII (1995), EP (1999) and the Ph Eur. (1999).

### Composition:

Ingredients	Grams/Litre
Casein peptone (pancreatic)	17.0
Soya peptone (papain digest.)	3.0
Sodium chloride	5.0
Dipotassium hydrogen phosphate	2.5
Glucose	2.5
Final pH 7.3 +/- 0.2 at 37°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 30 g of dehydrated media in 1 litre of purified filtered water. Sterilize at 121°C for 15 minutes.

### Principle and Interpretation:

Casein peptone and Soya peptone provide nitrogen, vitamins and minerals. The natural sugars from Soya peptone and Glucose promote organism growth. Sodium chloride is for the osmotic balance, while Dipotassium hydrogen phosphate is a buffering agent.

Tryptone Soya Broth is often for the tube dilution method of antibiotic susceptibility testing. The addition of a small amount of agar ( approx. 0.05-0.2% Fluka 05040, add before sterilisation) renders the broth suitable for the cultivation of obligatory anaerobes, such as *Clostridium* species. The superior growth-promoting properties of Tryptic Soy Broth make it especially useful for the isolation of organisms from blood or other body fluids. Anticoagulants such as sodium polyanetholesulfonate (Fluka 81305) or sodium citrate (Fluka 71635) may be added to the broth prior to sterilisation. 5 to 10 ml of blood may be added to 50 ml of medium.

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

Organisms (ATCC)	Growth	max. incubation time in days
<i>Escherichia coli</i> (8739)	+++	3
<i>Staphylococcus aureus</i> (6538-P)	+++	3
<i>Streptococcus pneumoniae</i> (6301)	+++	3
<i>Bacillus subtilis</i> (6633)	+++	3
<i>Pseudomonas aeruginosa</i> (9027)	+++	3
<i>Candida albicans</i> (2091 or 10231)	+++	5
<i>Aspergillus niger</i> (6301)	+++	5

References:

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