# Technical Information

## Soyabean Casein Digest Agar

## Product Code: DM 1290

**Application:** Soyabean Casein Digest Agar is a general purpose medium used for cultivation of a wide variety of microorganisms and for sterility testing in pharmaceutical procedures.

## Composition**

| Ingredients | Gms / Litre |
|---|---|
| Pancreatic digest of casein | 15.000 |
| Papaic digest of soyabean meal | 5.000 |
| Sodium chloride | 5.000 |
| Agar | 15.000 |
| Final pH (at 25°C) | 7.3±0.2 |

**Formula adjusted, standardized to suit performance parameters

## Principle & Interpretation

Soyabean Casein Digest Agar is a widely used medium, which supports the growth of large number of organisms even that of fastidious nature such as *Neisseria, Listeria,* and *Brucella* etc. The medium with addition of blood provides perfectly defined zone of haemolysis, while preventing the lysis of erythrocytes due to sodium chloride content. It has been frequently used in the health industry to produce antigens, toxins etc. Its simple and inhibitor-free composition makes this media suitable for the detection of antimicrobial agents in the food and other products. Tryptone Soya Agar is also recommended by various pharmacopoeias as sterility testing medium [1, 2].

Tryptone Soya Agar meets the requirement of USP [1] and is used in microbial limit test and antimicrobial preservative - effective test. Gunn et al [3] used this medium for the growth of fastidious organisms and study of haemolytic reaction after addition of 5% v/v blood. The combination of Pancreatic digest of casein and papaic digest of soyabean meal makes this media nutritious by providing amino acids and long chain peptides for the growth of microorganisms. Sodium chloride maintains the osmotic balance.

## Methodology

Suspend 40 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. If desired, aseptically add 5% v/v defibrinated blood in previously cooled medium to 45-50°C for cultivation. Mix well and pour into sterile Petri plates.

## Quality Control

**Physical Appearance**
Cream to yellow homogeneous free flowing powder

**Gelling**
Firm, comparable with 1.5% Agar gel

**Colour and Clarity of prepared medium**
Basal Medium: Light yellow coloured clear to slightly opalescent gel. After addition of 5-7%w/v sterile defibrinated blood : Cherry red coloured opaque gel forms in Petri plates.

**Reaction:** Reaction of 4.0% w/v aqueous solution at 25°C 7.3±0.2.

**pH range** 7.10-7.50

**Cultural Response/Characteristics**
DM 1290: Cultural characteristics was observed after an incubation for Bacterial at 35-37°C 18-24 hours and for Fungal at 20-25°C <=5days.

| Organism | Inoculum (CFU) | Observed Lot value (CFU) | Recovery | Observed Lot value (CFU) w/blood | Recovery w/blood | Haemolysis |
|---|---|---|---|---|---|---|
| *Bacillus subtilis ATCC 6633* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | none |

| | | | | | | |
|---|---|---|---|---|---|---|
| *Staphylococcus aureus ATCC 25923* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | beta |
| *Staphylococcus aureus ATCC 6538* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | beta |
| *Escherichia coli ATCC 25922* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | none |
| *Escherichia coli ATCC 8739* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | none |
| *Escherichia coli NCTC 9002* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | none |
| *Pseudomonas aeruginosa ATCC 27853* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | - |
| *Pseudomonas aeruginosa 9027* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | - |
| *Salmonella Abony NCTC 6017* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | - |
| *Micrococcus luteus ATCC 9341* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | - |
| *Streptococcus pneumoniae 6305* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | - |
| *Salmonella Typhimurium 14028* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | - |
| *Candida albi cans ATCC 10231* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | - |
| *Candida albi cans ATCC 2091* | 50 -100 | 35 -100 | >=70 % | 35 -100 | >=70 % | - |
| **Aspergillus brasiliensis ATCC 16404* | 50 -100 | 25 -70 | 50-70% | 35 -100 | >=70 % | - |

## Storage and Shelf Life

**Dried media:** Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
**Prepared Media:** 2-8$^0$ in sealable plastic bags for 2-5 days.

## Further Reading

1. The United States Pharmacopoeia / National Formulary, 2008, USP 31, The United States Pharmacopoeial Convention Inc., Rockville, MD.
2. Indian Pharmacopoeia, 2007, Govt. of India, Ministry of Health and Family Welfare, New Delhi, India.
3. Gunn B. A., Ohashi D K., Gaydos C. A., Holt E. S., 1977, J. Clin. Microbiol., 5(6) : 650.
4. Forbes B. A., Sahm A. S. and Weissfeld D. F., 1998, Bailey and Scotts Diagnostic Microbiology, 10th Ed., Mosby Inc. St. Louis, Mo

## Disclaimer :

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