# Antibiotic Assay Medium No.38

MU799

## Intended Use:

Recommended for the microbiological assay of Ticarcillin, using *Pseudomonas aeruginosa*, as the test organism in accordance with USP 1985.

## Composition**

| Ingredients | g / L |
|---|---|
| Peptone | 15.000 |
| Soya peptone # | 5.000 |
| Dextrose (Glucose) | 5.500 |
| Sodium chloride | 4.000 |
| L-Cystine | 0.700 |
| Sodium sulphite | 0.200 |
| Agar | 15.000 |
| pH after sterilization | 7.0±0.1 |

**Formula adjusted, standardized to suit performance parameters

# Papaic digest of soybean

## Directions

Suspend 45.4 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 mins. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

## Principle And Interpretation

This medium follows the specification of USP and CFR (1,2) and is routinely employed for agar diffusion assay of Ticarcillin using Gram negative test organisms specially *Pseudomonas aeruginosa*. This medium is used as both base agar and seed agar for assay of Ticarcillin.

Peptone and soya peptone provides carbon, nitrogen compounds, long chain amino acids, vitamins and essential nutrients and growth factors for the growth of test organisms. Dextrose serves as carbon source. Sodium chloride maintains the osmotic equilibrium. L-cystine and sodium sulphite are suphur providers that aids assimilation of sulphur during microbial growth. L-cystine also acts as growth stimulator and enrich the medium with amino acid source for promoting the growth. The high nutritional content along with high sulfur (cystine and sodium sulphite) content improves growth with chromogenicity of test organism *Pseudomonas*. Freshly prepared plates should be used for antibiotic assays.

## Type of specimen

Pharmaceutical sample

## Specimen Collection and Handling

Test organisms are inoculated in sterile seed agar pre-cooled to 40-45°C and spread evenly over the surface of solidified base agar. After use, contaminated materials must be sterilized by autoclaving before discarding.

## Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

## Limitations

1. Freshly prepared medium plates must be used or it may result in erroneous results.

## Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

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

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

**Colour and Clarity of prepared medium**
Yellow coloured clear to slightly opalescent gel forms in Petri plates.

**Reaction**
Reaction of 4.54% w/v aqueous solution. pH : 7.0±0.1

**pH**
6.90-7.10

**Cultural Response**
Cultural characteristics observed after an incubation at 35-37.5°C for 18-24 hours.

| Organism | Inoculum (CFU) | Growth | Recovery | Antibiotics assayed |
|---|---|---|---|---|
| *Pseudomonas aeruginosa* ATCC 29336 | 50-100 | luxuriant | >=70% | Ticarcillin |

## Storage and Shelf Life

Store between 10-30°C in a tightly closed container and use freshly prepared medium. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

## Reference

1. Tests and Methods of Assay of Antibiotics and Antibiotic containing Drugs, FDA, CFR, 1983 Title 21, Part 436, Subpart D, Washington, D.C.: U.S. Government Printing Office, paragraphs 436, 100-436, 106, p. 242-259, (April 1)
2. The United States Pharmacopoeia, 2022, The United States Pharmacopoeial Covention, Rockville, MD.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual Clinical Microbiology, 11th Edition. Vol. 1.

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