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# TECHNICAL DATA SHEET

# Aspergillus Differentiation Medium Base

## Principle

**Aspergillus Differentiation Medium Base formulated by Pitt et al (1983), used for the differentiation of aspergillus species. The media is composed of peptone, yeast extract, ferric ammonium citrate, dichloran and agar. Peptone and yeast extract provide nitrogen, amino acids, carbon, vitamins and other necessary growth factors necessary for growth. Ferric ammonium citrate helps in differentiation of aspergillus species. The aspergillus produces aspergillic acid or neoaspergillic acid, which react with ferric ions and form orange and yellow coloration. A mixture of chloramphenicol act as antibacterial agent and inhibits bacterial growth. While dicholoran restricts the spreading of moulds.**

**Use: For detection of aflatoxin producing Aspergillus species from food samples.**

**Contents***

| Ingredients | Gram/Litre |
|---|---|
| Peptone | 10.000 |
| Yeast Extract | 20.000 |
| Ferric ammonium citrate | 0.500 |
| Dichloran | 0.002 |
| Agar | 15.000 |
| pH at 25°C | 6.3 ±0.2 |

*** Formula adjusted for optimum performance and parameters**

**Directions: Dissolve 45.50 grams in 1000 ml distilled water. Boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs. pressure (121 °C) for 15 min, cool it to 42-45 °C, aseptically add Chloramphenicol Selective Supplement (100 mg). Mix well and pour into sterile petri plates. Avoiding air bubbles while pouring. Ensure complete solidification and inoculate test sample aseptically.**

## Specimens types analyzed

**Food and dairy samples etc.**

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## Precautions to be taken

**These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.**

## Performance and Evaluation

**The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.**

## Quality Control

| | |
|---|---|
| **Appearance** | **Beige colored free flowing, homogeneous powder** |
| **Reaction of 4.55% solution** | **6.3 ±0.2 at 25 ˚C** |
| **pH** | **6.10- 6.50** |
| **Gelling** | **Firm comparable with 1.5% agar gel** |
| **Color and clarity of ready medium** | **Light amber colored clear to slightly opalescent gel** |
| **Growth Promotion properties** | **Best at ≤ 100 CFU at 25-30 ºC for 36-72 h** |
| **Indicative properties** | **Optimum at ≤ 100 CFU at 25-30 ºC for 36-72 h** |
| **Negative control** | **Performed using sterile distilled water** |

**Different Microbial Response**
**Cultural characteristics observed with added chloramphenicol (100 mg/l), after an incubation at 25-30°C for 48-72 hours.**

| Organism | ATCC | Inoculum | Growth | Recovery | Colony color |
|---|---|---|---|---|---|
| ***Aspergillus flavus*** | **22547** | **50-100** | **Luxurious** | **≥ 60%** | **Yellowish orange on the reverse side of colonies** |
| ***Aspergillus brasiliensis*** | **16404** | **50-100** | **Luxurious** | **≥ 60%** | **Black spores are clearly visible from front and Pale Yellowish orange mycelium on the reverse side of colonies** |

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**Storage and Shelf Life:** **The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.**

**Disposal:** **To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.**

## Reference

1. **Pitt JI, Hocking AD, Glenn DR. (1983)** ***An improved medium for the detection of Aspergillus flavus and A. parasiticus.*** **J Appl Bacteriol. 1983 Feb;54 (1):109-14.**
2. **Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015)** ***Manual of Clinical Microbiology*****, 11th Edition. Vol. 1.**
3. **Koneman E. W., (Ed.), (1992)** ***Mycology, Colour Atlas and Textbook of Diagnostic Microbiology*****, 4th Ed, 1992, J. B. Lippincott Company.**
4. **Salfinger Y., and Tortorello M.L., (2015),** ***Compendium of Methods for the Microbiological Examination of Foods*****, 5th Ed., American Public Health Association, Washington, D.C.**

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