SABOURAUD DEXTROSE AGAR
GAMMA IRRADIATED

PRODUCT:
Plated Media:[a]

Sabouraud Dextrose Agar, item no.'s P8600 (100mm), P8840 (150mm), P8625 (100mm, Barrier)
Sabouraud Dextrose Agar with Lecithin and Polysorbate 80, item no.'s P8100 (contact plate), P8845 (150mm), P8605 (100mm), P8105 (contact plate, Barrier)

[a]see catalog for ordering options

PURPOSE:
Sabouraud Dextrose Agar is used for the isolation, cultivation, and maintenance of saprophytic and pathogenic fungi. This medium may be double filled in plates to reduce the effects of drying during prolonged incubation. The U.S. Pharmacopeia (USP) recommends this medium for total combined mold and yeast counts (Microbial Limits Tests). Gamma irradiation of packaged plates is recommended for use in critical environmental testing (i.e. clean rooms, pharmaceuticals, etc.) for determining microbial loads where a higher level of sterility is desired.

PRINCIPLE:
Sabouraud Dextrose Agar was described by Sabouraud[8] in 1892 and was used for the identification of fungi based on their morphological characteristics. Sabouraud Dextrose Agar is a standard medium used to support the growth of yeasts and molds. It supplies peptone as the protein source and dextrose as the carbohydrate source for nourishment. Bacterial suppression occurs due to the low pH.[1,3] It is especially suited for primary isolation of fungi from normally sterile sites.

Gamma irradiation of the packaged plates allows this product to be used in critical environments where introduction of contaminants is not desired. Aseptic removal of the inner packaging from the outer wrap allows the product to be moved into a clean room environment without the contaminated outer wrap. Product in the third inner wrap eliminates the need to aseptically rewrap the product for transport or storage and possibly contaminating the medium. Barrier Wrap is a unique material that is impervious to presterilizing agents such as vaporized hydrogen peroxide. Barrier wrap is designed for isolator environmental testing.

Lecithin and polysorbate 80 are added to the sabouraud dextrose formula to neutralize the inhibitory effects of germicidal or disinfectant residue and the consequent lowering of the microbial count. Lecithin neutralizes quaternary ammonium compounds and polysorbate 80 neutralizes phenolic disinfectants and hexachlorophene. Lecithin combined with polysorbate 80 neutralizes ethanol.

FORMULAS:
Approximate, per liter USP purified water. Adjustments may be required to meet performance standards and to compensate for the effects of media irradiation.

(1) Sabouraud Dextrose Agar (SDA):

Pancreatic Digest of Casein	5.0 g
Peptic Digest of Animal Tissue	5.0
Dextrose	40.0
Agar	15.0

Final pH 5.6 ± 0.2 at 25°C

(2) Sabouraud Dextrose Agar (SDA) with Lecithin and Polysorbate 80:

Pancreatic Digest of Casein	5.0 g
Peptic Digest of Animal Tissue	5.0
Dextrose	40.0
Lecithin	0.7
Polysorbate 80	5.0
Agar	15.0

Final pH 5.6 ± 0.2 at 25°C

PRECAUTIONS: *

For laboratory use. Observe approved biohazard precautions.

Plates are triple-wrapped with breathable bags for maximum sterility assurance. However, fluctuation of temperature and/or humidity due to changes that occur during shipping and/or storage environment occasionally result in accumulation of moisture. If excessive moisture is observed, packages may be stored agar side up at room temperature (not exceeding 30°C) for up to 10 days without affecting the shelf life.

Storage: Upon receipt, store at 2-8°C away from light. Media should not be used if there are signs of contamination, deterioration (i.e. shrinking, cracking, or discoloration), or if the expiration date has passed. Do not open outer wrapping until ready to use. Media can be inoculated up to the expiration date and incubated for the appropriate incubation period.

Limitations: This is a primary isolation medium. Any isolated organisms should be identified by appropriate biochemical and/or serological tests.

When the integrity of the seal or outer wrap is compromised, the product is no longer considered sterile.

Molds or spreading colonies can make accurate counting difficult.

Sealing the lids to the bottom dish with tape or other appropriate material may be necessary to avoid excessive dehydration and aerial dissemination of spores.

Unless a statistical method for monitoring is designed, the results can be uninterpretable or misleading.

The complexity of the surface (irregular, curved, porous, rough, or textured) to be tested may present sampling challenges for *contact plates*.

No single assay can characterize completely the microbial contamination in a specific area. A complete contamination control program should emphasize traffic control, special dress code procedures in critical areas, suitable ventilation, as well as good cleaning and disinfecting practices.

PROCEDURE:*

Method of Use: The sealed outer wrapper may be opened aseptically by peeling apart the clear film from the white film at the edge or by cutting with sterile scissors. If sterility of the inner packaging is required, then appropriate procedures should be used to maintain the sterility of the inner contents.

Samples should be collected using appropriate techniques. Transportation of samples should be done in a timely manner using appropriate methods.[5,6,7]

Samples should be inoculated onto plates as soon as possible using techniques that will yield isolated colonies. The agar surface should be flat and moist without excessive moisture or growth may be confluent and not as isolated colonies. Incubate plates at appropriate temperatures and conditions to isolate specific organisms.

If colony counts (CFU-Colony Forming Units) are required, consult appropriate references for the particular methods used.

Interpretation: Growth should be as isolated colonies not growing confluently. Count isolated colonies and group them according to their phenotypic appearance. If spreading colonies must be counted, then use the following criteria to count as one colony.

- a spreader that developed a film of growth between the agar and the bottom of the perti dish
- a colony that spreads on a film of water at the edge or over the agar surface
- a chain of colonies that appears to be caused by disintegration of a bacterial clump; count each chain as a single colony; do not count each colony in each chain

Colonies that require further identification should be subcultured for purity and then tested by biochemical, serological, and microscopic means.

Additionally, fungi may be transferred onto Sabouraud media and characterized by their gross morphology (topography, texture, and pigmentation), as well as rate of growth and microscopic appearance.

Material Required But Not Provided: Standard microbiological supplies and equipment are not provided.

QUALITY CONTROL:*

Microorganisms Used (ATCC #):	Expected Results:
Sabouraud Dextrose Agar	
Candida albicans (10231)	Growth
Trichophyton mentagrophytes (9533)	Growth
Aspergillus niger (16404)	Growth
Escherichia coli (8739)	Growth
Sabouraud Dextrose Agar with Lecithin and Polysorbate 80	
Candida albicans (10231)	Growth
Trichophyton mentagrophytes (9533)	Growth
Aspergillus niger (16404)	Growth
Escherichia coli (8739)	Growth

User Quality Control: Check for signs of contamination and deterioration. For more detailed information, consult appropriate references or regulatory guidelines.

BIBLIOGRAPHY:

1. Campbell, M. C., and J. L. Stewart, *The Medical Mycology Handbook*, John Wiley & Sons, New York, 1980.
2. Centers for Disease Control Laboratory Manual for Medical Mycology, *PHS*, Publication No. 994, U. S. Govt. Printing Office, Washington, D. C., 1963.
3. Cooke, W. B., *Antibiot. Chemother.*, 4:657, 1954.
4. Emmons, C. W., et al., *Medical Mycology*, 2nd ed., Lea and Febiger, Philadelphia, 1970.
5. Koneman, E. W., et al., *Color Atlas and Textbook of Diagnostic Microbiology*, 1st ed., J. B. Lippincott, Philadelphia, 1979.
6. Murray, P. R., et al., *Manual of Clinical Microbiology*, 6th ed., American Society for Microbiology, Washington D. C., 1995.
7. Rippon, J., *Medical Mycology*, W. B. Saunders, Philadelphia, 1974.
8. Sabouraud, R., *Ann. Dermatol. and Syphil.*, 3:1061, 1892.
9. Sabouraud, R., *Les Tegnes*, Masson et Cie, Paris, p. 553, 1910.
10. The U. S. Pharmacopeia, Eighth Supplement, U. S. Pharmacopeial Convention, Rockville, MD, 1998.

* For more detailed information, consult appropriate references.

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